How Might Traditional Cultural Knowledge Contribute to Sustainable Education? A Nepalese Case Study

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How Might Traditional Cultural Knowledge Contribute to Sustainable Education? A Nepalese Case Study

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Abstract

The research explores the contributions traditional cultural knowledge (TCK) can offer to sustainable education (SE). Education has been identified by the World Commission on Environment and Development (UN, 1987) as key to addressing sustainability issues. Agenda 21 (UN, 1992) stresses integrating sustainable TCK practices in education. However, the pedagogies on offer so far have not yielded the necessary shifts towards sustainable lifestyles. Sterling (2001), in his SE theory suggests transformative education which leads to changing consciousness; a necessary requirement for moving towards embracing sustainable lifestyles. Sterling, (2001) suggests that holistic education, such Steiner's education, has SE components as Steiner developed an extensive education approach to develop heightened consciousness.

In this research I examine, through an ethnographic study carried out in Nepal, how TCK might contribute to SE through linkages to Steiner's theory and practice of education. This study confirms that many TCK values and practices can benefit SE, for many aspects of traditional cultures ways of life are sustainable and can be incorporated in SE. In examining the literature and confirming it with this research study of *Bahing* culture I observed that many traditional cultures live sustainably; they provide their children with a natural childhood; educate their children by being a role model; and they have a welfare system that supports those in need without having to rely on external agencies such as governments. Also traditional people tend to be physically and emotionally resilient. Their spiritual practice is usually unbroken, which helps in maintaining and nourishing individuals and their community. Their worldview is holistic; interdependency and interconnectedness is normally the outlook which contributes to strengthening communities and their relationship with their natural environment. Furthermore, through the process of this research it becomes evident that the unique Steiner Waldorf Education (SWE) approach enables to capture TCK's richness and spiritual essence in the course of integrating TCK into an education practice.

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Acronyms and Abbreviations

B – *Bahing* language

BBR – *Bishnu Bahadur Rai*

DHR – *Dhana Rai*

DR - *Dhiren Rai*

ECD - Early Childhood Development

EE – Environmental Education

INGO – International Non-Government Organisation

N - Nepali language

NGO – A Non Government Organisation

SD – Sustainable Development

SE – Sustainable Education

SWE – Steiner/Waldorf Education

TCK – Traditional Cultural Knowledge

USAID - The United States Agency for International Development

VDC – Village Development Committee

Acknowledgment and Dedication

In gratitude to all who have touched my life along the path and made this journey possible.

I dedicate this work for the welfare of all.

Chapter 1: Introduction to, and Overview of the Research

1.1 The Research Problem and an Overview

This research explores how traditional cultural knowledge (TCK) might contribute to sustainable education (SE). It does so through an ethnographic study of the *Bahing* people of Nepal. The situation facing *Bahing* is, of course, unique. However, it is also illustrative of issues that confront traditional societies more widely. In this study, therefore, I address a sub-problem within sustainable development (SD). That problem is: how change towards sustainable living can be supported through transformative sustainable education. I address this problem by finding out what sustainable appropriate TCK in a particular traditional culture can be utilised and integrated into a localised education programme.

In this research I am primarily interested in the TCK aspect of a particular culture. I draw boundaries on the term culture by concentrating on the long-established knowledge of a society that has been around for generations. The TCK in this research is subdivided under the following headings: economy; social constructs, relationships and values; Nature; and spirituality.

The Brundtland Report (UN, 1987) and other UN reports (UN, 1992; UNESCO, 2005) emphasise the significance of including TCK as an integral process of SD; that is, maintaining cultural diversity and keeping communities connected to some aspects of their traditional way of life. In emerging nations, where international development has been at work since the end of the Second World War, development was mostly expressed through introducing Western models without much consideration to local needs or TCK. This became a double-edged sword as, in some aspects, development was also the cause of loss of ancient ways of life, sense of identity and acceleration of environmental degradation. This research focuses on societies that are more self-sufficient and are still less dependent in the process of development that they have already gone through. In other words, the aim is to sustain their way of life before it disappears.

Socially, culturally, economically, politically and environmentally *Bahing* traditional lifestyle is in many ways in agreement with sustainable development ideas, even though they may not be aware of post-modern environmental practices and activities. They are still primarily subsistence farmers and do not rely much on cash economy for their survival. They grow most of the food they consume, seldom buy things, and build houses according to ecological principles. *Bahing* show material restraint and value their material possessions because they understand the hard work that goes into obtaining them. Nothing is wasted, everything is used to the maximum. Electricity and gas in *Bahing* villages where I conducted the research are produced using green technology. Their natural environment is free from waste, and from water-, air-, noise- and light-pollution.

Bahing culture for the most part is still intact. Almost all *Bahing* still speak their mother tongue, *Bahing*. They practice their spirituality, which is deeply linked with respect to their natural environment, in many aspects of their daily lives. Within *Bahing* society everyone is regarded as equal. Socially they are still organised in a traditional way with a strong sense of community, generosity and understanding of the nature of interdependency as a necessity for surviving and thriving in their environment. They seem emotionally resilient, highly skilled and competent in managing living in their natural and social setting. In this study I use the term resilience to mean the ability of a social group to adapt to and recover from external shocks and disturbances.

Ever since SD has become a global agenda (UN, 1987), education has been seen as one of the key tools for bringing the shift towards sustainability. Stephen Sterling's sustainable education (SE) theory is one response to this problem. Sterling (2001; 2003) recognises that communicating knowledge about SD in itself is not enough to convince individuals and communities of the pressing need to adapt and change to living a more sustainable lifestyle. In his SE theory Sterling (2001) suggests an epistemological change which has an effect on the way education is thought of and practiced. Sterling's (2001) SE views education as working on an individual level, and advocates a

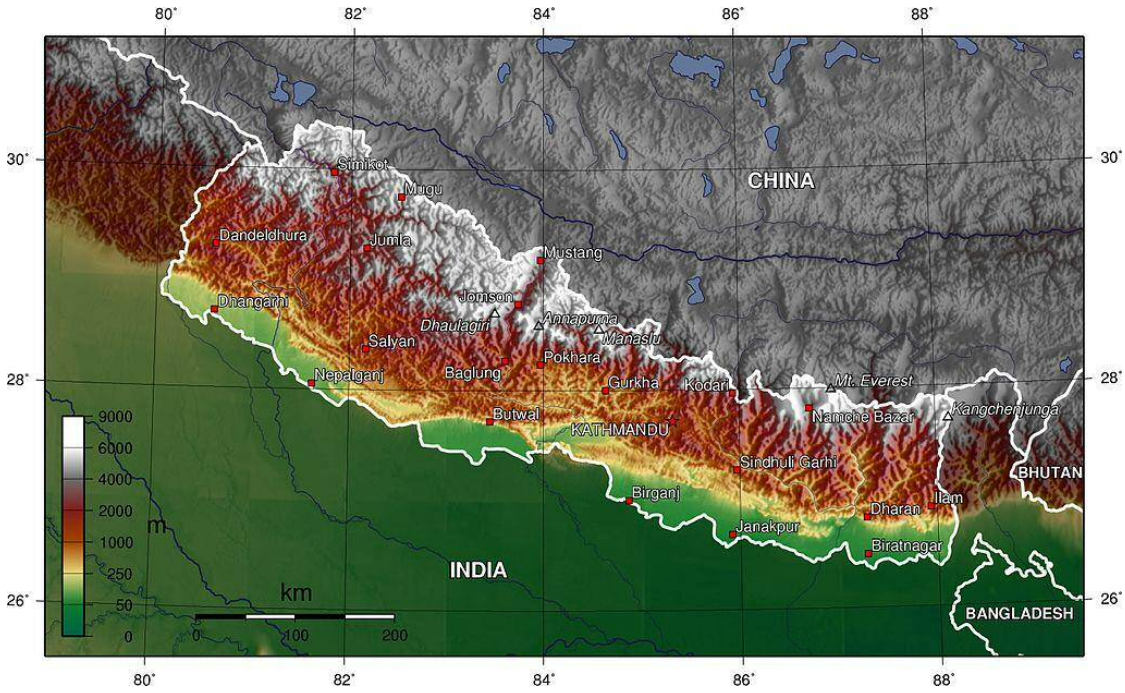
transformative approach to learning working on changing individual consciousness; a necessary requirement for moving towards embracing sustainable ways of living.

SE, Sterling (2001) suggests, can possibly become the overarching term for confluence of transformative educational approaches such as the one offered by Steiner. Steiner created an extensive pedagogical approach to develop heightened individual's consciousness towards freedom. Steiner says nothing, as such, about sustainability but offers a theory of spiritual understanding of Earth, children and learning that seems relevant both to SE and transmitting TCK. Steiner/Waldorf education (SWE) contributions, I propose, might be means by which TCK is pedagogically applied in support of the child's changing consciousness.

Therefore, the work of Sterling and Steiner has strong bearing on this research. It is possible to derive insights and practical educational applications into Sterling's theoretical work from SWE philosophy and methodology. The objective in this is to employ Steiner's practical educational applications with Sterling's SE theory and examine how TCK might contribute to SE through linkages to SWE. TCK relies on transferring knowledge from one generation to the next. The manner in which TCK is handed down the generations is crucial. With this in mind, the aim of this research is to find out how SE and SWE pedagogical applications can assist in carrying forward essential sustainable TCK, which may found valuable by present and future generations. To engage with my research problem I use the Himalayan *Bahing* ethnic group as a case study to examine how TCK can contribute to SE. Below is some background information about Nepal and the *Bahing.*

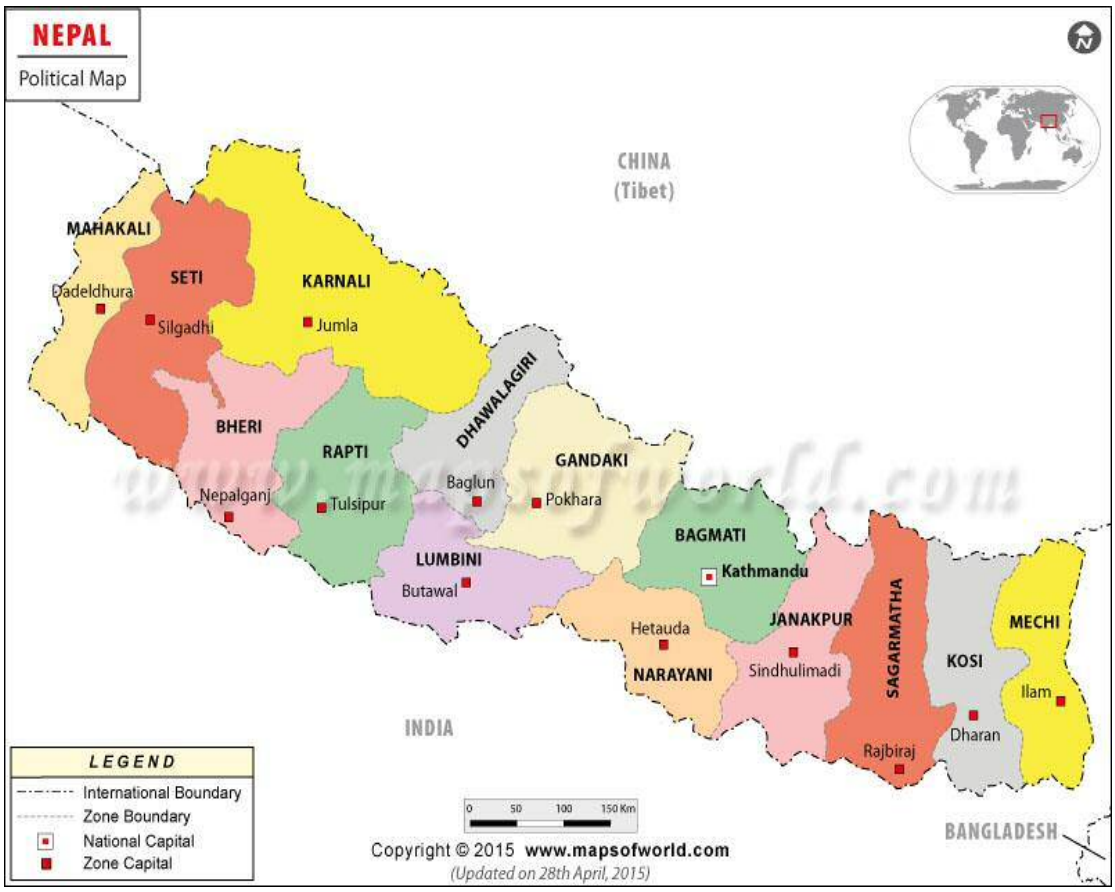
The Himalaya region is home to several communities with rich natural environment, cultural traditions and religions. Nepal is situated in the middle of the Himalayas and is nestled between Tibet and India (see Map 1.1). Nepal is split into 5 development regions, 14 zones and 75 administrative districts (see Maps 1.2 and 1.3). Each district is divided into Village Development Committees (VDC). In addition, geographically, Nepal is divided into three main geographical regions: in the south the plains; the mid-hills; and, the high Himalayas in the north (see Map 1.1).

Map 1.1: Nepal: physical map



Source: Wikimedia Commons, (2006).

Map 1.2: Nepal's 14 zones



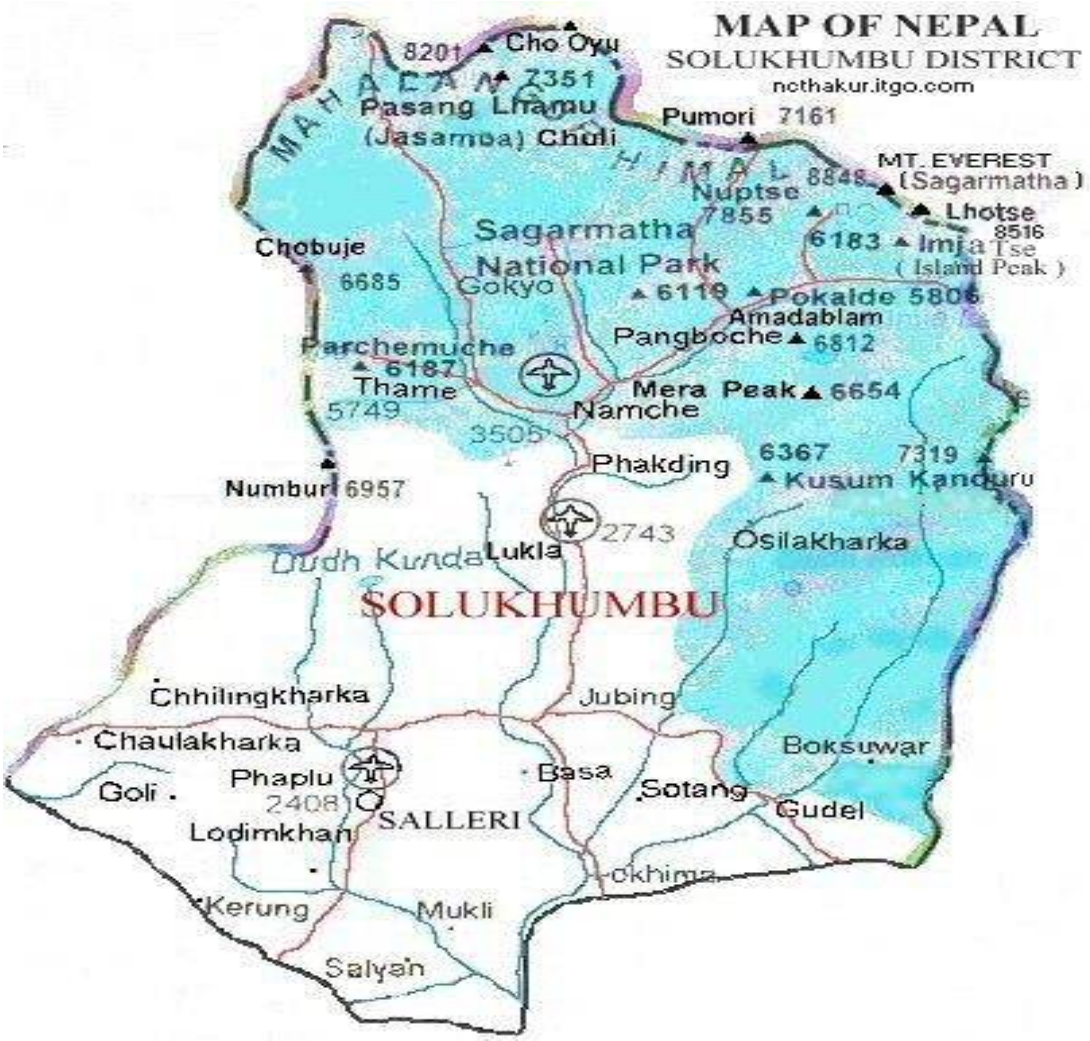
Source: Maps of the World, (2015).

Map 1.3: 5 Development regions and 75 districts of Nepal

Source: Government of Nepal (2000).

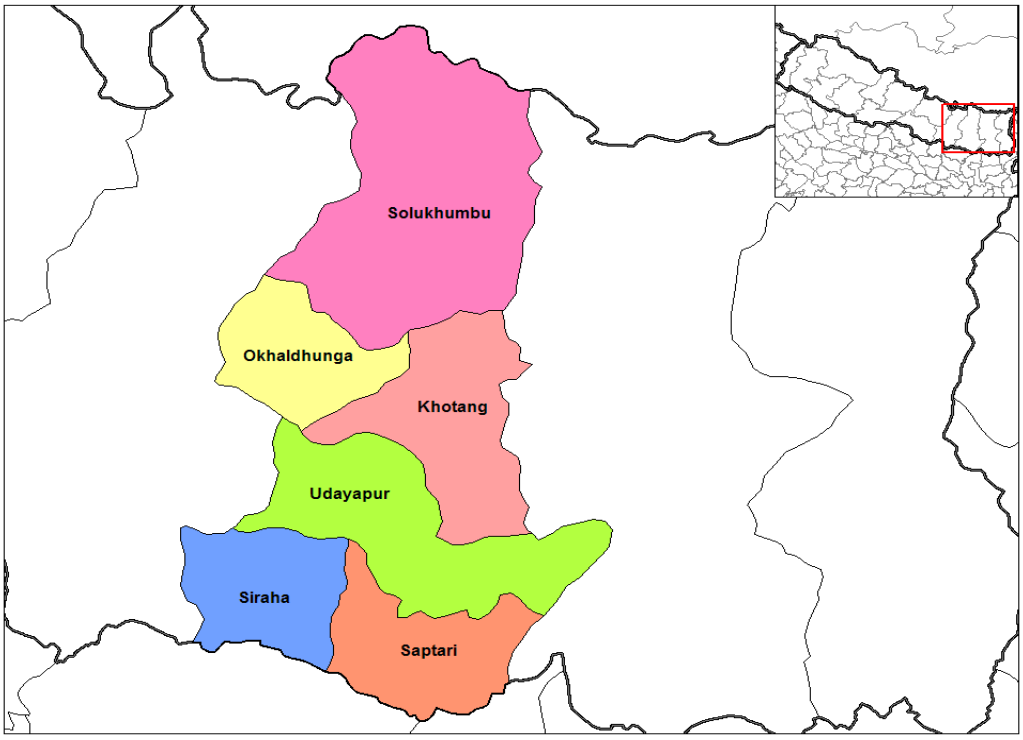
This research's case study is focused on a *Bahing Rai* ethnic group in *Solukhumbu* district (see Map 1.4) of the *Sagarmatha* region in East Nepal (see Map 1.5). *Solukhumbu* is divided to two parts; *Solu,* the southern mid-hills section (up to 3,000 metres), and *Khumbu* the northern high mountains with Mount Everest. *Salleri*, the district headquarters (see Map 1.4), is about 8 hours walk from the research site. The research site is located in the district's southernmost VDC called *Salyen* (see Map 1.4). The cluster of *Bahing* villages of *Sero*, *Jujuru* and *Asti* form the research site. Most of the people who live in *Jujuru* also have a house or land in *Asti*, making the two hamlets essentially one. These villages are part of *Solu*'s distinct *Bahing* settlement of approximately 10 villages. Most of the villages' residents are *Bahing* but some have a few *Chhetri* and low caste occupation families settled there as well. Near this settlement are villages occupied by other ethnic groups and caste people such as *Sherpa*, *Tamang*, *Magar*, *Newar*, *Brahmin* and *Chhetri*.

Map 1.4: *Solukhumbu* District



Source: Thakur (2015a).

Map 1.5: Sagarmatha zone in east Nepal



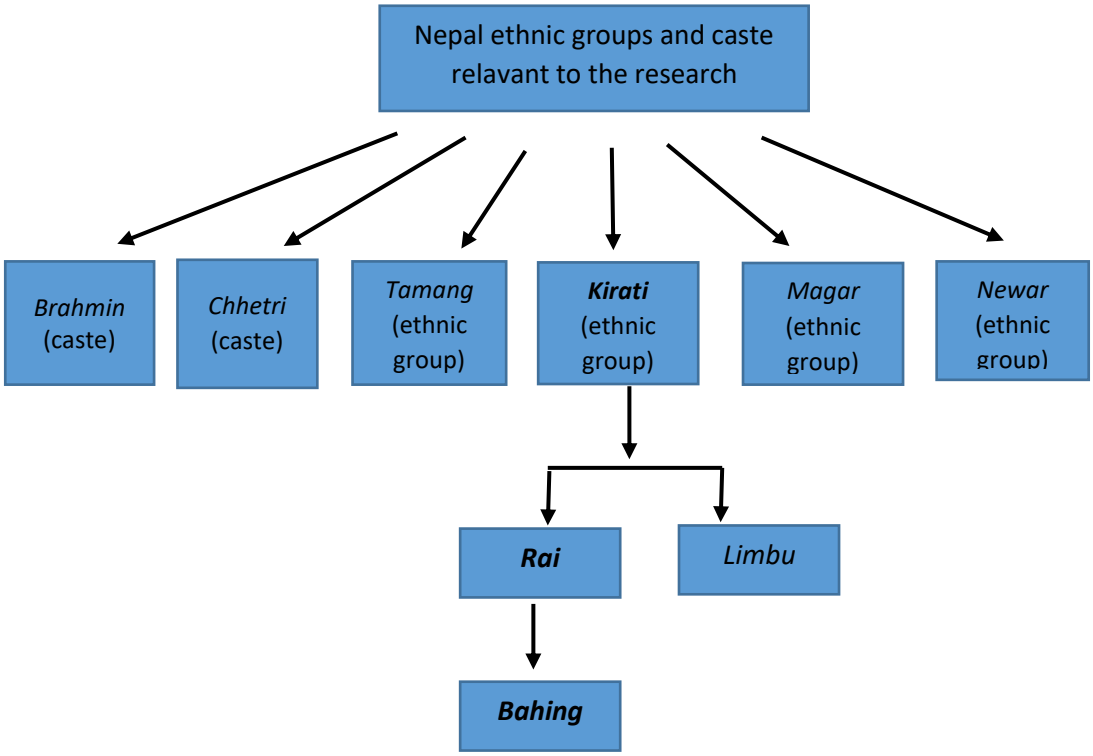
Source: Rarelibra, (2006).

The research site geographical area is sub-tropical to moderate as *Bahing* usually live at an altitude between approximately 1000 to 2500 metres. The climate is moderate with April to June being the hottest time of the year. The arrival of the monsoon at the end of June brings the temperature down marginally but increases humidity. The winters are relatively short but cold and damp. Spring and autumn are very pleasant.

Photo 1: The research site

There are about 35 ethnic groups in Nepal, of which the *Kirati* forms the largest. They are believed to be the first people to arrive and settle in Nepal (Majupuria & Majupuria, 2013). Historically, the *Kirati* moved away in search of new land and now includes mostly *Rai* and *Limbu* ethnic groups (see Figure 1.1). The *Rai* are considered to be the oldest ethnic group who primarily settled in the mid hills region of East Nepal (McDougal, 1979).

Figure 1.1: Nepalese ethnic groups and caste relevant to the research



Nepal was established as a nation by the Gorkha King *Pritivhi Narayan Shah* who unified Nepal's many kingdoms in 1768. At that time the *Rais* and *Limbus* were the largest ethnic groups settled in East Nepal (McDougal, 1979). *Rai* consists of about 28 or 36 tribes or sub-groups including *Bahing*. Each speaks their own distinct language although *Rai* languages are closely related and are part of the Tibeto-Burmese languages (McDougal, 1979; Nicoletti, 2006). All *Rai* consider themselves of equal status. Their social boundaries and rituals are open, flexible, and tolerant; women, for example, are not discriminated against.

In 2012, 3,096 *Bahing* speakers were registered in the Nepali Central Bureau of Statistics (CBS, 2014). However, in a meeting in 2014 with the *Bahing Kirat Mulukhim*'s Executive Committee (a representative organisation of *Bahing*) I was told that many *Bahing* registered themselves as *Rai* and did not mention that they are *Bahing Rai*. In this conversation, members of the committee suggested that there are

approximately 55,000 *Bahing* people residing in 11 districts in Nepal, including those who settled in the last few decades in Kathmandu. The majority of *Bahing* live in *Oakaldunga*, *Solukhumbu* and *Khotang* districts (see Map 1.5).

1.2 Aims and Objectives of the Research and Likely Contribution to Knowledge

In this research I examine how TCK might contribute to SE through interweaving TCK with Steiner's core education approach using SE as the grounding and guiding theory. I also explore how SE can enable and assist in carrying forward essential TCK which may be found valuable by present and future generations. The research objective is to identify a process of bringing together TCK, SE and SWE to design a localised sustainable transformative education programme.

The value of the research is that it adds to knowledge by providing insights into how a problem identified through SD, anthropology and education-related disciplines may be addressed, placing education at the heart of the possible solutions. The research looks at how change can be reconciled for the better with conservation of the best, and how to create new values without destroying the old ones. I believe my contribution to knowledge lies in not only answering that TCK can contribute to SE, but also in providing guidance on how SWE methodology can be used to process such knowledge into a transformative education practice. In order to add to existing knowledge I set out what the relevant existing knowledge is (Chapter 2), then I test it by conducting a detailed case study (Chapters 4, 5 and 6). In Chapter 7 I draw conclusions for the literature in order to build theory.

1.3 The Research Question

How might traditional cultural knowledge contribute to sustainable education?

Research sub-question

What are the process and the guidelines that can be drawn out of this study and might be tested in other cultural or educational settings?

1.4 Outline of Data Collection

I was aware that my fieldwork was going to be logistically challenging and that I needed time to get to know the people in the research site and gain their trust. I therefore made contact with possible leads upon commencing my studies and travelled to Nepal in search of the site in spring 2013. A time line of key events of this research can be found in Appendix 2.

1.5 Positioning myself in the Context of this Research

Even though I am not Nepalese, I have spent over twenty years living and working in Nepal. The choice of Nepal for my case study is as a result of my professional involvement, during these years, in setting up the first Steiner/Waldorf schools in Kathmandu, catering mostly for children from families that fled rural areas that were savaged by the Maoist war (see Appendix 3). I developed a culturally relevant curriculum for Nepalese children of many ethnic backgrounds and designed a teacher training programme that integrated Buddhism and Hinduism. The education programme I developed was concerned with the conservation of these children's traditional knowledge as well as keeping them connected to their heritage and mother tongue.

Over the years I observed the changes that occurred in Nepal, particularly in Kathmandu, as a result of development and the effects of the Maoist war. The paddy fields were replaced with concrete buildings; air pollution became among the worst in the world; holy rivers became toxic; and family and social structures were shaken as many men and women left to other countries as migrant workers. It is alarming to me that much of Nepal's rich culture is gradually disappearing and with that also Nepal's extraordinary natural beauty. This study seems to me to be a progression of deepening my understanding and work as an educator in the Himalayan region.

My professional experience and the years I lived in Nepal place me in a unique position to do this research. However, I am aware that as I am quite close with Nepalese culture I have to be careful not to be led by my own instincts, judgements or prejudices. Despite

my familiarity and ease with Nepal I still consider myself an outsider. My case study is with a small indigenous ethnic group with an animist-mixed-with-ancestor-worship tradition, which I knew little of. This helped me experience Nepal in a fresh way and be able to discern what is distinctly *Bahing* and what aspects of their lives is part of Nepalese lifestyle.

1.6 Glossary of Definitions

Throughout the thesis I capitalised the word Nature which refers to here as non-human nature. This is to distinguish this term from any other definition of the word nature, which may refer to characteristics (as in nature of the human being, for example).

Please see Appendix 1 for a list of glossary of definitions.

1.7 Outline of the Thesis

Chapter 2 establishes the conceptual framework bringing together aspects from SD-, alternative development-, anthropology- and education-related disciplines. Chapter 3 discusses my choice of methodology and provides a description of my analysis process. In Chapter 4 I share and reflect on my field work experiences and describe my data collection process. In Chapter 5 I report my data as an ethnography of *Bahing*. Chapter 6 is an analysis of my data where I bring together SE, SWE, examples of sustainable *Bahing* TCK, and TCK from the literature. In this chapter I work my way from the particular, the case study, and link it with the literature on TCK, education and SD. I then connect it with SE and SWE practical applications to show where TCK can contribute to SE through the SWE approach. The final chapter summarises my argument and my findings. It sets out how TCK can contribute to SE and describes how a localised sustainable education programme might be developed.

Chapter 2: Literature Review

2.1 Introduction

The United Nations (1987) World Commission on Environment and Development (also known as the Brundtland Commission) in their report 'Our Common Future' formulated a global agenda for change, urgently calling for SD. The Commission's overarching strategy to achieve this was through economic growth that is limited to the ability of the biosphere to cope and remain healthy. The report states that the environment and development are inseparable as the "'environment' is where we all live; and development is what we all do in attempting to improve our lot within that abode" (UN, 1987:2). One of the recommendations for achieving change is through education and learning (UN, 1987; UN, 1992).

In order for human beings to be willing to change towards sustainable lifestyles, the head of the UN World Commission on the Environment and Development (UN, 1987) asserted that "(t)he world's teachers will have a crucial role to play" (UN, 1987:4) in bringing the urgent message of SD to young people. The important role of education in SD has been expressed numerous times in consequent UN reports with regards to addressing sustainability issues. Transmitting knowledge about SD in itself is not enough to convince a majority of individuals and communities of the urgency to adapt and change to living a more sustainable lifestyle (Bowers, 1995; Foster, 2008; Sterling, 2001). Attempting to teach SD using approaches based in the prevailing educational culture, which essentially supports unsustainability, seems futile (Bowers, 1995). Sterling (2001) suggests a new education paradigm, which is a transformative kind of education that works on deeper levels and aims at changing consciousness; a necessary requirement for moving towards embracing sustainable ways of living.

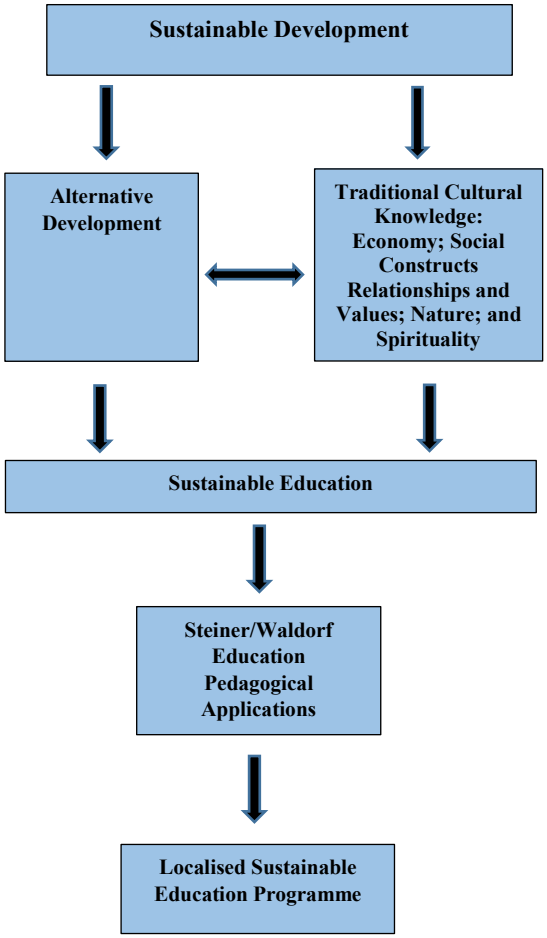
2.1.1 About this chapter

My research aims to find out how SE can enable and assist in carrying forward valuable TCK. Through this research it should be possible to examine whether designing such an education programme can meet some of the needs for conservation of the biophysical

environment, indigenous culture, spirituality and the traditional environmentally-conscious practices in order to help communities address changes within themselves and their relationship with a changing world. This literature review sets out the knowledge base on which the research builds.

The first part of my literature review is a description of the journey and boundaries of my literature review. It follows with a brief history of the works that led to the birth of SD, and a discussion of the various UN reports on sustainability and other writings that emerged as a result. I will then link TCK and alternative development literature to SD. The second part of the literature review provides an overview of the developments that led to sustainability education, particularly, Sterling's (2001) sustainable education paradigm. I then explore SE's suitability as a tool for implementing aspects of SD and TCK in a move from a transmission kind of education towards a more transformative education. The last part of this chapter makes the case for engagement of SWE and SE. This includes reviewing briefly Steiner's philosophy of freedom which underpins his education theory and practice, and relating it to SE. Figure 2.1 presents the path taken in this literature review.

Figure 2.1: Interlinking big issues in SD and alternative development with TCK, SE and SWE



2.1.2 The journey of my literature review

The backdrop to the journey into the literature began with reading two anthropological accounts, of the Ladakhis in Northern India (Norberg-Hodge, 2000) and First Nations in Canada (Brody, 2001). These two different communities are, interestingly, encountering similar challenges in preserving their traditional way of life, or what remains of it, in the face of modernisation. The books give accounts of these people's relationship to (non-human) Nature, and fellow human beings, describing the effects modernisation had on accelerating change, bringing both destruction and some improvements to their way of life.

I became aware that the two communities, traditionally had a strong connection with their natural environment as they were dependent on it for their survival. They lived with the understanding of the interconnectedness between living and non-living beings in the world. This seemed to manifest in their rich oral tradition and rituals, imbued mostly with reverence and respect to human and non-human Nature. Reading these accounts, I identified issues and themes and placed them under the four categories of: economy, social constructs, values and relationships; Nature (non-human); and, spirituality, all of which together encompass TCK. This served as an initial framework when exploring the extensive and varied literature of SD and education, alternative development and TCK.

2.1.3 A note about research boundaries

The areas I chose to engage with in my literature are potentially vast and, so throughout this chapter I continue to draw further boundaries for each section of my conceptual framework.

SD engages in the economic, environment and social realms (UN, 1987). The role of education as a tool in addressing the issues in these realms is important (UN, 1987; UN, 1992; UN, 2012). Foster (2008:13) in his book 'The Sustainability Mirage' says that "…(f)or good or ill, the global market economy is where we have to operate to save the planet: it's there, or nowhere". Even though economics is an important part of addressing SD, the emphasis in this research is on the role that education plays in the quest towards a sustainable world.

Any research concerning SD is likely to touch upon several aspects of the commitments to SD stated in the Brundtland report (UN, 1987) even though its purpose may be to research one aspect in particular. This research is no different. I recognise that this research relates to (directly or indirectly) changing unsustainable patterns of consumption and production; pollution reduction; conservation, restoration and protection of Nature; preserving cultural diversity; and poverty eradication. Furthermore, researching education and sustainability is bound to relate to areas such as

well-being, poverty, and social justice. While I accept the importance of such fields and the way they relate to my research, this study focuses on the manner in which sustainable TCK may contribute to SE, in the change towards meeting SD goals.

2.2 Sustainable Development

2.2.1 Historical background

The events leading to the conceptual birth of the term SD possibly began in Stockholm at the United Nations Conference on the Human Environment in 1972, where the main discussions concerned the effects of human activities on the biosphere and the protection of the natural environment. If, in the 1970s, the focus centred primarily on Nature conservation through protecting specific areas, a decade later it became clear that economic growth is not only about increasing the training of skilled people but had to take into strong consideration the rate in which natural resources are shrinking as a result of economic growth (Sachs, 1991). In 1980, the International Union for the Conservation of Nature in their World Conservation Strategy used the term SD for the first time. The thought of this concept, of humanity's responsibility towards taking care of the biosphere, began to be formed as a possibility for policies (Foster, 2008).

It was, however, in 1987 with the UN Commission on the Environment and Development that SD moved into the limelight (Orr, 2002), with the 'Our Common Future' report dedicated to formulating a global agenda for change towards sustainability (UN, 1987). This report refers to the urgent need to sustain natural resources for present and future generations through Nature conservation; pollution reduction; economic growth that respects Nature's resource limitations; poverty eradication and development; and maintaining cultural diversity through preserving TCK. This report crucially points out that humanity has reached a point where we are forced to face the reality of the devastating effects of economic growth on the natural environment. The link between environmental sustainability and social justice was emphasised, and has rarely been challenged.

One of the decisions of the Brundtland Commission (UN, 1987) was to meet again in five years' time to discuss progress. The 1992 UN Environment and Development conference in Rio de Janeiro, (also known as the 'Rio Earth Summit'), discussed the course of action for SD. Much of the discussion in the Earth Summit revolved particularly around Agenda 21 (UN, 1992) with differences of perspectives strongly noticeable between the North and the South nations (Redclift, 1997). This gap in the Summit's discussion was linked to the definitions of 'development' and 'limited economic growth' (Redclift, 1997).

The South perceived the global environmental impact to be as a direct result of poverty and viewed economic growth as key to poverty eradication (reducing the stress on the biophysical environment) (Redclift, 1992). The South did not want economic development ruled out in the process of SD (Foster, 2008). For the South, the discussion on how to tackle global environmental impact had to focus on issues of unequal distribution of resources. The North, which began to realise the destructive effects of economic growth and development on the biosphere (Foster, 2008), was interested in focusing on what they saw as the main reasons for global environmental impact; climate change and loss of biodiversity (Redclift, 1997). The outcome from the Earth Summit was the Declaration on Environment and Development stating the actions agreed by nations to take in a move towards SD. As a result of the North/South disagreements, the strategy for action became broader and somewhat more compromised than intended. However, it was recognised that SD is needed as a result of a "constraint from the future" (Foster, 2008:6).

There were many other conferences and meetings that took place for two decades following the Earth Summit. Particularly significant was the United Nations Conference on Sustainable Development in 2012, called Rio+20. In this conference, commitments to the Rio 1992 agreement on the actions to SD in the economics, environment and social domains were renewed in a report titled 'The Future We Want' (UN, 2012). Also included in the Rio+20 report is a commitment to accelerate the agreed development goals and to meet the Millennium Goals. Decades of meetings, conferences, reports, commitments and still Rio+20 (UN, 2012) recognised that the actions in attaining such

goals were uneven thus far, reasserting the importance of the need to act towards a change to sustainable living.

Having said that, taking a look back, starting from Carson's (1962) 'Silent Spring' to Rio+20, we can appreciate the speed in which the progress SD made in gaining worldwide recognition. In a fairly short time it took centre stage, influencing policies and activities on regional, national and community level (Foster, 2008). Renewing the commitments to SD in 2012 might encourage confidence; however, such confidence needs to be based on the level of actions taken to tackle the threats. Chambers (1997) and Foster, (2008) several years before RIO+20 (UN, 2012) expressed their concern at the gap between the commitments made and the actual actions taken. However, the fact that commitments to SD have been renewed is encouraging and may suggest, among other things, that further research in sustainability is necessary and important, accepting that research in this area concerns not only understanding issues but also includes recommendations for actions towards sustainability (Franklin & Blyton, 2011).

2.2.2 Sustainable development definition, issues and uses

With this background in mind, I continue my literature review with a discussion about the definition, and contested nature of the term SD starting from the Brundtland Commission report (UN, 1987). It is at this point that it requires clarification that the term SD and sustainability refer in some literature to two separate things. SD is defined by some as the process to reach the end goal which is sustainability. Others use the term sustainability and SD to mean the same thing as each other (Scott & Gough, 2003). In this research, both terms will take on the same meaning, referring to the process of working towards SD.

According to the Brundtland report, (UN, 1987:43) SD is defined as "…development which meets the needs of the present without compromising the ability of future generations to meet their own needs." The report explains that SD is "…a process of change" (UN, 1987:10) that takes into consideration the needs of present and future generations in terms of managing natural resources, and the direction in which

investment and technology are employed. It explains that the manner in which SD is understood and put into action will differ depending on the context. Issues of SD vary in different parts of the world and are context based (Gough & Scott, 2007; Wals & Corcoran, 2012).

The Brundtland Commission's definition of SD is broad and somewhat vague, (O'Riordan, 2004), leaving it open to numerous interpretations depending on context or the field and discipline one engages with, (Gough & Scott, 2007; Redclift, 1992). An example of such vagueness can be taken from trying to understand which human needs are most significant and what is the task of the natural environment in fulfilling them (Redclift, 1992). To use Orr's (2002:1457) words, Brundtland confuses "…sustainable growth, an oxymoron, and sustainable development, a possibility". Stables (2001:42) explains that such definition "allows those of widely differing views to 'buy into it' to some extent giving rise to the possibility of ambivalence", and that there is no agreement on the meaning of this term and its uses.

From a purely educational perspective, Wals and Corcoran, (2012:23) propose that the problems of tackling "…unsustainability lies in the complexity, power dynamics, rhetoric and uncertainty that surrounds sustainability issues", and suggest that there are no simple answers or single truths to address the sustainability challenge.

Gough and Scott (2007) observe that, on a worldwide measure, the way we live our lives in the present without giving much consideration to the future is a common element in many of the wide number of definitions. Foster (2008:25) suggests that definition of the term SD is not as important as the "…broad topography of the sustainable development concept". This "topography" he explains, is twofold: the obligation and responsibility to regain balance of natural resources so there is enough for present and future generations; and the possibility to measure the success and failures in obtaining this balance. Placing constraints, that is, ensuring that the capacity of (non-human) Nature for regeneration is not destroyed while providing for our present needs is a formula, according to Foster, (2008) that is applied specifically in the pursuit of development.

Peattie (2011:25) suggests fifteen specific areas linking environment, society and economy in SD:

In economic system includes: “energy use; technology; production and consumption; employment, business and trade; and prosperity and material standards of living”.

In social system includes: “poverty and social inclusion; personal development: education, health and responsibility; equality, diversity and culture; population, migration and global development; and homes and communities (rural and urban)”.

In environmental system includes: “land, landscape and material resources; ecosystems and biodiversity; water resources; climate and climate change; and pollution and waste”.

The above discussion offers a taste to the contested nature of the term SD. Connelly, (2007) explains this disputed concept by describing three different responses to it: The first one is to perceive SD as not difficult in theory but possibly not easy to realise. In the second response, there is a recognition of the ambiguity of the original definition of SD (UN, 1987), which then proceeds with attempts to explain, clarify and offer further definitions. The third response uses an analytical approach to describe the vagueness of this concept. Gough, et al., (2015) shed some light on the complexity of SD’s concept through describing the various attempts at defining it by academics holding varied and at times opposing worldviews. As Gough (2014) points out elsewhere, the term has been adopted by academics and policy-makers ranging from those who find any reduction in economic growth self-evidently unthinkable to those who find any continuation of it just as unthinkable. Foster (2008) has suggested that the entire range of meanings attributed to SD amount to a ‘mirage’. It is, he suggests, simply a way of deceiving ourselves about the severity of the problems and the availability of viable responses. The remaining section discusses the various definitions and responses to SD offering a taste to the complexity and contested nature of this idea.

I have found Sterling's work particularly suggestive in the *Bahing* context from both a development and an educational context. Whatever knowledge the villagers may hold on sustainable development or ecological practices can strongly influence what and how

development occurs in their locality. For villagers to be informed, education is necessary. However, it needs to be an education that provides *Bahing* with knowledge that helps in understanding sustainable development and offers them tools to make their own informed decisions on what and how change and development takes place in their locality.

This research takes its working definition from Scott and Gough (2004:1): "…a process which we shall need to learn to live more in tune with the environment". For them, it is impossible for SD to take place if learning is not a fully integrative process of building the capacity to live in a sustainable way. Scott and Gough (2004) explain that the goal of learning and SD are similar, for both call for human beings to build abilities and aptitudes to work through understanding challenges and the way they relate to their lives. As this research also concerns TCK, this definition resonates with resilience that traditional societies' ways of life have acquired over time, where they constantly and continually learned to adapt to the changing conditions of their natural environment.

2.3 Alternative Development

Development, as a field of study is vast and hence, to narrow it down to the relevant facets for my research, I include only these aspects relevant to SD, and in this context, discuss the relationship between TCK and development. SD falls under the alternative development heading. Alternative development looks at "what should be the case" rather than "what was the case" (Potter, 2008:69). Incorporating TCK in development, goes hand in hand with the bottom up approach which is also an approach of alternative development.

It was in the 1972 Stockholm conference that the need for alternative development approaches was first strongly voiced (Sachs, 1991), partially through a concern for the biophysical environment, and partly because of the lack of success of conventional development methods (Brohman, 1996). The shift towards alternative development thereafter continued, and became the new orthodoxy in the eighties and nineties (Cornwall, 2002; Kapoor, 2005). The understanding that emerged in the seventies was

that, in some cases, development turned communities from societies that were able to provide for themselves, and were self-sufficient, to be dependent, and at times disempowered. It also brought about a great deal of environmental degradation (Brohman, 1996). In other words, the poor became poorer (Sachs, 1991). Also, conventional development processes are inclined to reduce cultural diversity, assuming that everyone's needs are alike, e.g., needs for similar type of houses, food, clothes or entertainment (Norberg-Hodge, 2000).

Traditional societies, as any society, experience constant change and have a right to raise their standard of living and to prosper in whatever way they consider right for them. The direction and the manner in which change and development takes place is being discussed here, suggesting development processes that encourage a more human scale and local, context based development pattern, in which traditional cultures' structures and knowledge can be respected and supported rather than destroyed.

2.3.1 Environmental Kuznets curve

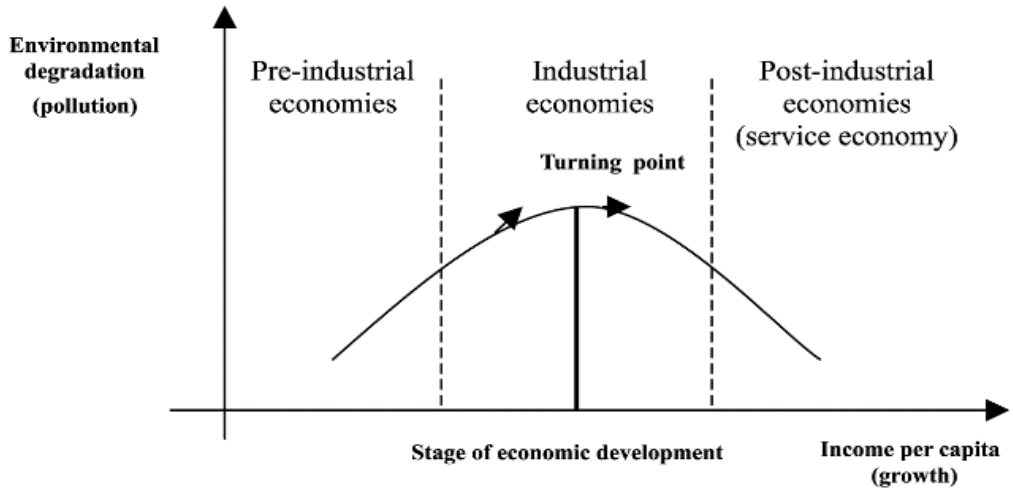
An awareness of the environmental Kuznets curve hypothesis (Grossman & Krueger, 1991) is helpful in gaining an understanding of the links between sustainability and development. Much has been written about this hypothesis but I intend to engage it only as an heuristic to aid explanation. The environmental Kuznets curve asserts that there is a positive relationship between societies' economic development and increased pollution and degradation of the natural environment until they have reached a certain level of wealth. (Grossman & Krueger, 1991).

This inverted U- shaped Curve (Barbier, 1997) (see Figure 2.2) also implies that people have heightened concern for the environment when their wealth and education levels rises beyond a certain point, resulting in increased activities to protect and conserve the natural environment (Stern, 2004). The environmental Kuznets curve hypothesis reflects the Brundtland report (UN, 1987) concept of SD where economic growth (as a path to alleviate poverty) may, in the long run, improve the conditions of the environment

(Stern, 2004). This Curve represents one idea for development in the spectrum of international development concepts and practices.

A key question for this research is whether, through education, a society can short-cut the curve, moving along the x axis without upward movement on the y axis.

Figure 2.2: Environmental Kuznets curve: the relationship between development and the environment



Source: Panayotou (1993)

Source: Panayotou, (1993/2000:3)

Kathmandu, the capital city of Nepal, has experienced economic growth in the past two decades. The *Bagmati* River, which passes through Kathmandu, is one of the tributaries of the Ganges River and therefore is considered sacred. Despite it being a holy river, it is extremely polluted with toxic waste from factories, ashes from funeral pyres and rubbish dumped by people for decades. Even though this research takes into consideration the environmental Kuznets curve hypothesis, it stretches beyond the effects of economic development on air and water pollution in a society. It looks at TCK and practices and their relationship to the environment which supports sustainability.

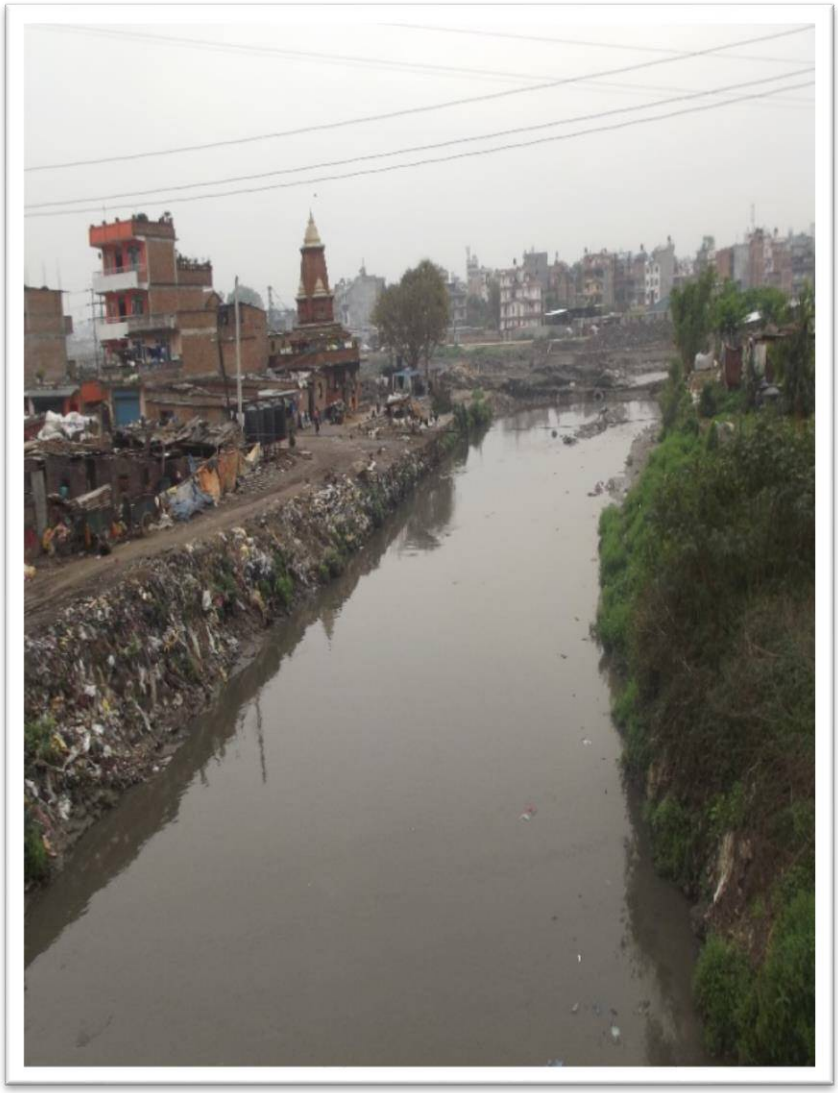


Photo 2: *Bagmati* river tribute in Kathmandu

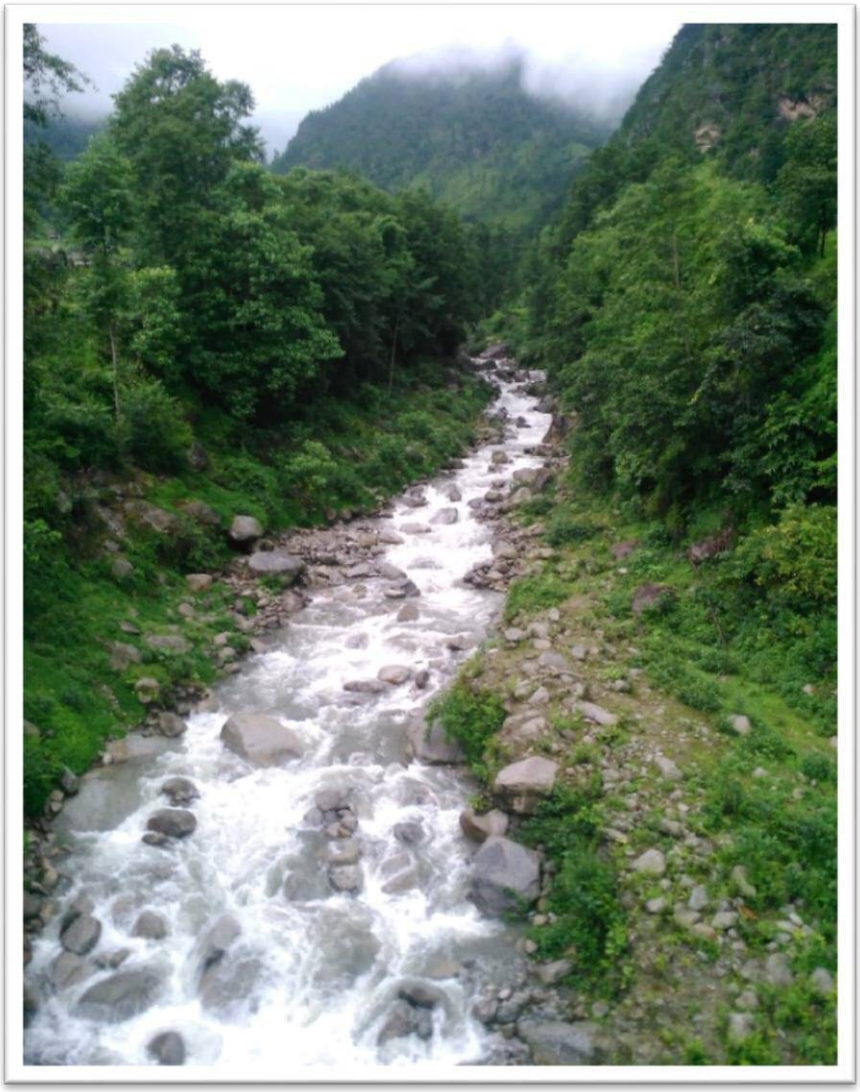


Photo 3: *Gugurdi* river near the research site

Perhaps a glimpse towards finding such a shortcut in the process of development can be, by looking at those few communities, mostly in rich nations, which have gone through the change from traditional way of life to modern living to post-industrial lifestyle. These individuals and communities are active in pursing sustainable living. They try to live in an aesthetic and conscientious physical and social environment combining traditional knowledge, which is recycled and improved, green technology and up-to-date scientific knowledge that supports sustainable way of life. For example, constructing eco houses using both traditional and advanced green technology.

The environmental Kuznets curve, according to Komen, et al., (1997) may also demonstrate the relationship between economic prosperity and the increase in the creation of technology that does not degrade the environment. Hence a shift from industrial to post-industrial lifestyles can be seen as to integrate environmentally conscientious lifestyle and clean technology innovation. Traditional cultures that live in what may be described as pre-industrial lifestyle, may possibly engage with development through learning from other countries that have gone through the process of destruction of the environment.

The term development or international development may lack a clear definition, however, according to the UN (2007) and Devex (2017) development includes the economic and social realms, improving economic conditions and job opportunities, reducing poverty and inequality, improving health and education quality. Development is usually measured on a country level by assessing gross domestic product, protecting human rights and individual freedom as well as looking at literacy rate, life expectancy and maternal survival rates (Devex, 2017). As discussed already in this section, development in this research also includes quality of life that is linked with the state of the natural environment (e.g., clean air and water).

The meaning of the term development is also contested as, on the one hand, development helps improve standards of living, reduce human suffering and prolong life expectancy; and, on the other hand, it can bring about environmental degradation and erosion of traditional ways of life. For example, in the research site the paving of the road track could well mean a difference between life and death as the journey to the nearest hospital has now shortened by seven hours! However, the track road also makes easy access to packaged goods and other culture's ideas that alter their way of life.

Paulo Freire (1970) developed the idea of participatory action research, advocating for a bottom up approach where people are given the voice to articulate their needs for development. One of the important changes that took place as a result of this was that by the nineties participatory development was integrated into just about any development policy and initiative (Kapoor, 2005; Chambers, 1997). As a result,

individuals and communities were encouraged to partake in the whole process of development, from planning, being consulted with, and becoming active participants and in control of the process of change (UN, 1987; Chambers, 1997), throughout the development process. For instance, Save the Children UK changed the way it works in the nineties and is now working with the ideal of "supporting a more participatory community based approach" which aims to "develop the ability of local groups to identify and implement sustainable solutions for their own development" (Webley, 2003:7). Interestingly, a couple of decades after Freire and Chambers' bottom up approach, Tandon (2009), states that development so far has been ineffective and counterproductive. He suggests a new form of development aid relationship that is built on solidarity and honesty between those who help and their recipients. This would imply an approach that perhaps moves away from either top down and bottom up approach to somewhere in the middle where all players are equal.

2.3.2 Development in sustainability context

It was in the Brundtland report (UN, 1987) that the concepts of development and caring for the biophysical environment were brought together. The report sees economic growth as the main solution to remove poverty and for human beings on the planet to have a reasonable standard of living; it cautions, however, that this growth needs to be limited, ensuring that the strain on natural resources and the ecology is not irreversible. It also states that the process of development encompasses a "progressive transformation of economy and society" (UN, 1987:32), however, the report does not provide with any clear and detailed recommendations on how this may be achieved and leaves the understanding of "progressive transformation" to a wide range of interpretations in various fields such as development and education.

Some of the developing world's main concerns are poverty, struggle for daily survival that is imposed by lack of food, water, sanitation, proper health care to deal with diseases, and employment (UN, 1987). This means that beyond having to face the hardships that come with being poor they are also faced with the grave risks of embracing (or to some extent, already engaging with) unsustainable ways of life as experienced in developed countries, which come with industrialisation and

modernisations, all in an effort to bring about economic development and improve standards of living. With the commitments to SD, developing countries are expected to not only improve quality of life for its citizens but to do so in line with sustainability. Opportunities come from the possibility to minimise the destructive aspects of economic development; but it requires a fundamentally different kind of thinking on all levels in the developing world to move in that direction, something that many developed countries are struggling with despite the increase in awareness by individuals and leadership of SD issues and ways to work towards it.

2.3.3 Alternative development and traditional cultural knowledge

One of the aims of development in line with SD is to increase standard of living without foregoing the social and environmental balance that traditional societies have experienced for centuries (UN, 1987; UN, 1992; UNESCO, 2005; UN, 2012). Chambers (1983) and others recognise that such knowledge should be used as the foundation from which these societies may build on rather than tear them down (Escobar, 1995; Paniagua-Zambrana et al., 2016). In addition, Black (1999:176) links the loss of cultural diversity to biodiversity loss "…because indigenous people are often the only guardians of the secrets of their habitats, of the healing, nutritional, and other exploitable qualities of the flora and fauna of their environments". Black (1999) says that ironically, traditional societies are deemed in our time as the pollutants of the environment they inhabit and not part of it.

The process of change that is taking place in traditional societies is unavoidable and unstoppable regardless of arguments for and against development. The process of change, whether done intentionally or indirectly, ideally would carry forward important values, traditions and ways of life that are needed for a smoother transition into the modern world. To aid with that, Chambers (2005) suggests that in development activities, local communities need to express the changes they would like to embrace. Necessary knowledge of traditional societies' connection or reverence to spirituality, culture and the environment needs to be retained in the process towards a sustainable future (UN, 1987).

Critiques of using TCK in development suggest that their knowledge is not scientific or rational; it is full of myths and erratic knowledge, and "…too specific to offer any meaningful solution…" (Briggs, 2008:108). Briggs (2008) cautions in the danger of approaching development processes that may be too dependent on either conventional scientific and technological styles or TCK. On the one hand, employing only conventional development scientifically proven methods has shown to be unsuccessful; and on the other hand what is the purpose of development if only TCK is used. In reality, these two extremes are not possible, and TCK is used, where it is used at all, to complement and add to scientific knowledge in development initiatives (Briggs, 2008).

2.4 Traditional Cultural Knowledge

This research indicates how education might support a change towards a sustainable way of living. This includes finding out appropriate sustainable TCK, which can then go hand in hand with an educational process. Using a global approach to sustainability has at best been partially successful in moving towards sustainable lifestyles and the required changes by individuals towards it have only been, in many aspects, on a small scale. This section of the literature review draws on literature primarily from anthropology. Even though anthropology and education are discussed in this chapter separately, during the data collection phase of this research anthropology and education will be simultaneously interwoven in the process of data collection and analysis.

The terms 'traditional knowledge', 'traditional culture', 'indigenous knowledge', 'ethnic knowledge', 'indigenous culture', 'traditional indigenous culture', 'local knowledge', 'rural people's knowledge', 'traditional environmental (or ecological) knowledge' (McGregor, 2004) and other variations of that type are used in the various literatures across disciplines to mean the distinctive cultural practices and constructs of a social group. For Sillitoe, (2002: 8) "they all share a certain common semantic load and address the same broad issues". He further explains, that for many, the terms local knowledge and traditional knowledge are used to mean indigenous knowledge. I chose, for the purpose of this study, to use the term traditional cultural knowledge (TCK) to set further boundaries and place it as an over-arching term to the above mentioned terms. At first I selected the term traditional knowledge as the overall term and separated

culture to be one aspect of traditional knowledge. However, after reflection on the various literatures on culture I merged the two terms to traditional cultural knowledge (See Figure 2.3 on page 56).

The International Council for Science, (ICSU 2002:3) defines traditional knowledge as,

> …cumulative body of knowledge, know-how, practices and representations maintained and developed by people with extended histories of interaction with the natural environment. These sophisticated sets of understandings, interpretations and meaning are part and parcel of a cultural complex that encompasses language, naming and classification systems, resource practices, rituals, spirituality and world-views.

TCK is part of a body of knowledge of any society. It is knowledge that has been developed, gathered, preserved and accumulated over long periods of time and passed down primarily orally from one generation to the next. At the heart of TCK is the understanding that everything and everyone are interrelated and interdependent, be it on a physical, emotional, social, cultural, spiritual or biological level (Odora Hoppers, 2004).

TCK is locally bound, is retained in the memory of individuals and is kept alive through ceremonial and practical daily activities such as dance, rituals, storytelling, songs, art and craft production, artefacts, rules and values, conflict resolution, farming and husbandry practices, food processing, meteorology, astronomy, and herbalism (Odora Hopper, 2004; Sillitoe, 2002). TCK is learnt through observation and imitation (Sillitoe, 2012; Diamond, 2012). Such knowledge is not held as a whole by everyone in the community but certain individuals know certain things and there are some aspects of knowledge that are shared by everyone (Sillitoe, 2012). Together this makes the whole TCK of a society. This TCK is influenced by both internal and external factors, such as other cultures, and is not static (Rao, 2006).

Diamond (2012) reflects that, historically modern living is a very new phenomenon in human societies and that humanity has lived in a traditional way for most of its existence. In recent times societies have experienced extraordinary and rapid changes (Gómez-Baggethun & Reyes-García, 2013; Paniagua-Zambrana et al., 2016). However, Diamond, (2012) observes that traditional lifestyles shaped us to be the way we are, and that modern societies still include functions using many traditional elements. He concludes that "…the world of yesterday wasn't erased and replaced by the new world of today; much of yesterday is still with us" (Diamond, 2012:8).

Scott and Gough (2003) make the observation that some traditional societies have been able to continue with their lifestyle and prosper without needing modern science while others have been at the mercy of their environment or simply valuing TCK that does not necessarily contribute to sustainability or their own survival. Keeping this in mind, in this section I take the middle path of neither rejecting TCK nor viewing it as the only solution to the problem humanity faces.

TCK should be seen as contributing to SD, not as a silver bullet. It can be used in bringing about new consciousness, with TCK as the mapping tool or a guide rather than being normative. It keeps communities connected to their heritage as a first step, and then becomes a tool to create space for a new way of thinking that links the past, and the future (towards the change in being that is needed to embrace sustainability). If we assume that people have agency, there are certain aspects of traditions that require adaptation in the same way that certain modern living aspects require changing. At this point it is important to include that in this study I will attempt to understand TCK from the perspective of traditional societies' own context. This is supported by Haack's (1993:190) explanation that "the central tenet of contextual understanding is that the justification for someone believing in something has to be evaluated according to the epistemic standards of the community in question".

In this research the term conservation refers to conserving valuable *Bahing* traditional knowledge in the context of change. It relates to safeguarding their knowledge while it is in use as it is carried forward and adapted to meet the changing needs of the community. The term preservation here refers to aspects of cultural knowledge that requires keeping things as they are without changing. In the case of some cultures both conservation and preservation take place simultaneously. An extreme example of the distinction between conservation and preservation that is quite common now around the world is where people earn money to participate in a cash economy by putting on displays of traditional practices for tourists. The practices are preserved but not conserved (Scott & Gough, 2003).

Examples of conservation and preservation activities are of the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICRROM, 2015), an INGO that engages a people-centred approach to cultural or heritage conservation. 'Cultural Survival,' is another international organisation engaging in conservation and in assisting …"indigenous communities to organize and shape their futures in ways consistent with their traditions, languages, cultures" (Cultural Survival, 2017). The Australian Institute of Aboriginal and Torres Strait Islander Studies under the Australian Department of Education and Training is an example of collecting, publishing and promoting knowledge and understanding of Aboriginal and Torres Strait Islander cultures, traditions, languages and stories. They too engage with both preservation and conservation of Aboriginal traditional knowledge. The UNESCO 1972 convention for the conservation of world heritage includes also indigenous culture's conservation and collaborates with United Nations Environment Programme (UNEP) regarding Nature and indigenous cultures conservation. The International Union for Conservation of Nature (IUCN, 2017) is supporting indigenous people to conserve their territories through giving them the authority and power to conserve their indigenous natural areas and with that their culture and heritage. Nature conservation and conservation of indigenous cultures in essence cannot be separated from.

2.4.1 Science and traditional cultural knowledge

There has been an on-going debate about the role, usefulness and scientific validation of TCK, particularly in the field of development. Scientific western knowledge has dominated development projects since the end of the Second World War with the dominant view being that TCK is culturally bound, unscientific, cannot be generalised and therefore is not important (Breidlid, 2009). Odora Hoppers (2004:8) observes that TCK is still being disregarded even though it remains a "…living framework for continuing creativity and innovation in most fields of technology". She argues that for many people TCK is the foundation for economic and cultural wealth and prosperity.

Others view TCK as a contrast to western scientific knowledge (Agrawal, 1995). Sillitoe (2002:10) argues that western science "…is no less culturally located than other knowledge traditions". A shift in opinion occurred in the late eighties amongst those engaged with development work, certainly observable in the Brundtland report (UN, 1987), that a western scientific approach brought less than the anticipated success in certain contexts (Davis & Ruddle, 2010) and a great deal of destruction to the environment and TCK. McGregor (2004:72) argues that "uncritical belief in Western science and technology as the only valid approach to resolving environmental problems has fallen by the wayside". He suggests using an approach that is inclusive of traditional environmental knowledge.

Pei, et al. (2009:2020) suggest that scientific knowledge and TCK are "not mutually exclusive" and it is advantageous to view them as complementary. Hence, cooperation between the two different knowledge systems can yield much better results in conducting development and conservation projects. Coral and Darou (2002) observe that indigenous people view scientific knowledge as useful to include in some areas of their lives and that it can go together with their own traditional knowledge which they feel is their right to maintain and should be respected throughout the process of development. Shepherd, (2010) suggests perceiving local TCK not as confronting universal scientific knowledge but as inclusive of it. McGregor (2004:87) proposes that "coexistence may serve as potentially promising bridge between two world-views".

The position taken here is that natural science is necessary but not sufficient to address unsustainable practices. Another point of tension between TCK and natural science is that at its heart TCK cultivates the idea of interdependency between humans, Nature and the divine which is manifested through human-Nature relationship. Bowers (1995:25) explains that, historically, natural science served to disqualify explanations by traditional cultures of natural phenomenon "…which have been the basis of cultures that have lived in sustainable relations with the rest of the biotic community". The modern human being, Bowers (1995:27) continues, experiences herself as separate from the world, as she now finds herself as "the source of thought and values". This, according to Bowers (1995), relates directly to the destruction and depletion of biophysical systems. To farmers and hunters in traditional societies there is no separation between universal science and their own beliefs system, even though that may now be perceived as religious and irrational (Diamond, 2012).

2.4.2 Traditional cultural knowledge in the policy context

The Brundtland report (UN, 1987), Agenda 21 (UN, 1992), as well as UNESCO (2005), emphasise the significance of TCK and call for it to be included as an integral process of SD; that is, maintaining cultural diversity and keeping communities connected to some aspects of their traditional way of life. Encouragingly for traditional societies, Agenda 21 (UN, 1992) requires governments to assist people of traditional cultures to include knowledge and practices of SD in education and training. Furthermore, Rio+20 (UN, 2012:8) stresses "…the importance of the participation of indigenous peoples in the achievement of sustainable development". Hence, SD requires valuing not only the content of TCK but also creating space for the varied qualities traditional cultures and its people have to contribute to the process of sustainability.

2.4.3 Culture

Culture in anthropology, according to Eriksen (2001), can be considered as a purely analytical term, for it is difficult to speak of traditional society anymore as separate from, for example, modernity. Furthermore, Winch (1970) argues that as culture is a set of concepts and ideas created in the human mind, cultural knowledge cannot be judged as true or incorrect except within its own cultural context. Hence, viewing culture as an

educational tool, this literature review does not argue for the validity or truthfulness of TCK. It perceives TCK partially from its content and background, and partially in relation to its usefulness to promoting sustainable living regardless whether the practice or constructs are scientifically true.

The literature concerning culture is vast. As culture only forms one aspect of this literature review, I will define some boundaries with an awareness of a whole range of understanding and theories of culture that are of marginal relevance, here and so beyond the scope of this study. The boundaries and definitions I engage with are somewhat artificial, as in reality any culture is not isolated, "cultures are neither closed nor internally uniform" (Eriksen, 2001:306). In other words, there is no such thing as a stand-alone pure culture. To illustrate this point, in my case study, I will be referring to *Bahing* as a culture, even though *Bahing* form a sub-culture within the dominant Nepalese Hindu society and have incorporated some of the dominant culture's traits into their own. *Bahing*'s culture is being influenced by increased contact between societies (by for example, migrant workers returning to the village and modern culture that arrives through the media).

One of the first anthropologists, Edward B. Tylor (1871:1), explains that "(c)ulture, or civilization, taken in its broad, ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man (and women) as a member of society". Within anthropology, there are variations on the definition of the term culture; some that build on, or diverge somewhat from Tylor's holistic definition of the constructed human world.

Rappaport (1968) suggests the term 'ecological culture', and defines it as a resource of knowledge and objects as instruments to be used in order to survive and flourish in the natural environment. Furthermore, culture is a construct of shared meaning of human behaviour forming a collective conceptual structure of a specific group or society (Geertz, 1973). Triandis (2000:1) explains that "culture is to society what memory is to individuals" and suggests that culture includes shared constructs of useful instruments and concepts that are passed on from one generation to the next. He also suggests that

culture: contains sets of distinct beliefs and values; having a dialect; being placed within a historical period; having a sense self-distinction; and, role characterisations. This array of learned human behaviour also includes areas such as knowledge of a definable geographical terrain and transforming the landscape, beliefs, art, craft, artefacts, and sets of accepted and expected social norms for a group (or social systems) (Eriksen, 2001).

Carrithers (1992:57) explains that "from infancy humans are directed to other human beings as the significant features of their environment". O'Neil, (2012) states that culture is not static and constantly goes through changes and transformations and is at the risk of being lost, rendering human beings fragile and resilient at the same time. Through these definitions, I engage with culture as a body of practices and constructs that define and distinguish a specific society, giving them a common identity (Eriksen, 2001). Furthermore, culture includes aspects such as a shared language, values, social practices, actions, and social interactions, religion and rituals, customs, food, clothing, shared histories and oral traditions (Diamond, 2012; Eriksen, 2001). This shared cultural knowledge has been passed down from one generation to another (Handelman, 1977) though parents and other family members, as well as the social community which shares common ancestral background and experiences, giving it its distinct identity.

Bocock (1992:234) summarises five definitions for the term culture that have evolved over the centuries. Three out of five of his definitions of culture are relevant to this study: "cultivating the land, crops, animals," which relates to the economy category below; "the meanings, values, ways of life shared by particular…groups", and "the practices which produce meaning, signifying practices" which is under social constructs, values and relationships and spirituality of the below categories. I use these definitions of culture not to create a hierarchy of various cultures but to borrow some of Bocock's summary of definitions to describe the wide range of concepts and ideas that encompass culture. I will then use these definitions to guide me through understanding what TCK encompasses. Some of Bocock's (1992) definitions have been influenced by the field of anthropology and the social sciences and focus on what culture does and how it does it: "Culture defined as the meanings, values and ways of life of a particular group" (Bocock, 1992:232). In this research, the meaning making of daily life and social

interactions is the focus. Culture in this sense looks at spiritual practices and their symbolism and meaning making in everyday life.

2.4.4 Traditional cultural knowledge's categories

Through an analysis of the various definitions of culture and traditional knowledge I identify four categories that together encompass TCK: economy; social constructs, values and relationships; Nature; and spirituality. Underpinning this analytic process are Odora Hoppers (2004:3) conceptual classifications of TCK: "physical, natural, social, economic and ideational environments".

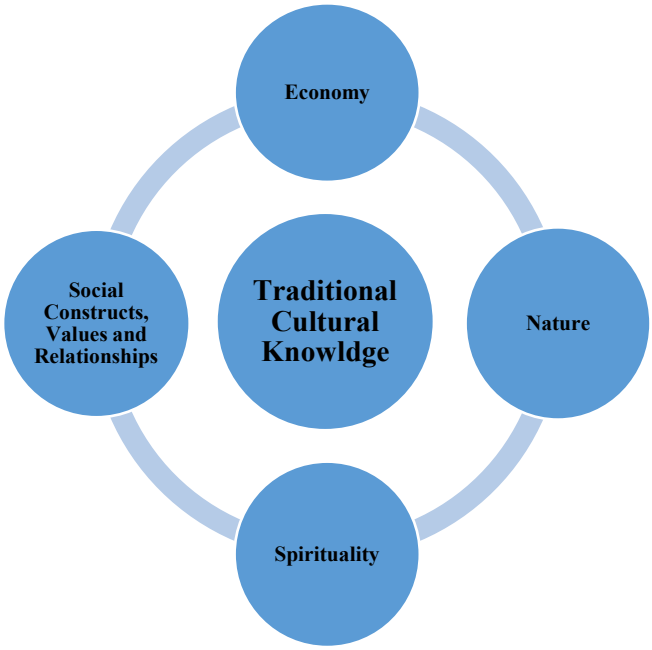
Economy: grouping the words livelihood, food processing, clothing, capabilities, farming, husbandry, craft, herbalism, astronomy, meteorology, knowledge of the terrain, transforming the landscape, natural resource management and knowledge, crafts, and trade and sharing resources.

Social constructs, values and relationships: grouping the words beliefs, language, oral tradition, myths, storytelling, shared history, language, art, dance, songs, customs, habits, law, rules and values, morals, conflict resolution, social welfare, being a member of a society, community, individuality, education, family, child rearing, relationships and social interactions, relationship to change, and culture that constantly changing and evolving,

Nature: through knowledge of the surrounding geographical terrain and the relationship between humans and Nature.

Spirituality: grouping the words religion, beliefs, and rituals.

Figure 2.3: Traditional cultural knowledge



I accept that the process of separating and categorising concepts is artificial and in reality these themes are interwoven and overlap to make the one concept of culture. It may also give the false impression that culture is static and, without continuous dialogue with other cultures and other influences. In fact it is in a state of constant motion of creation, transformation and re-creation.

In next discussing the four categories I interchangeably use the terms 'traditional society', 'traditional community', 'traditional culture', 'indigenous society' all of which, in the context of this study, refers to either hunter-gatherers, herders or farmers in pre-industrial societies or communities.

2.4.4.1 Economy

In most traditional societies 'economy' includes everything that is involved in human beings producing their means of subsistence. 'Economy' relates to what is required to

maintain a household. Its ancient Greek root is *oikos* which is also the root of the word 'ecology'.

Economy is objectified in the manner in which the landscape has been transformed by humans. Hunter-gatherers' way of life is such that they adapt and conform to the natural environment as it changes. By contrast, traditional farming societies simultaneously adapt to and transform their natural environment, and modern societies adapt the natural environment to their needs (Sandell, et al., 2003).

Traditional people have a certain style of dialogue between them and their surroundings (Pierotti & Wildcat, 2000; Cajete, 2000). They may seek not to dominate Nature but recognise that upsetting its balance by taking too much will bring about unpredictable, and probably undesirable, consequences (Levi-Strauss, 1966; Bowers, 1995; Pierotti & Wildcat, 1997, 2000; Black, 1999; Nakashima & Roue, 2002). Furthermore, the manner in which a traditional society knows their Natural environment and their geographical territory may be seen as material wealth (Cajete, 2000; Nakashima & Roue 2002). For example, using knowledge of traditional medicines and herbs supports people to live in their local environment. (Norberg-Hodge, 2000; Brody, 2001)

As traditional societies rely directly and immediately on their natural environment for their survival, and recognise this, an attitude of respect and reverence to Nature is nurtured (Black, 1999; Pierotti & Wildcat, 2000; Brody, 2001; Odora Hoppers, 2004; Setalaphruk & Price, 2007). For example, an important aspect of TCK is the use of specific plants for healing purposes (Chakravarty, 2010) and for trade.

Traditional societies engage with trade not only for economic purposes but also to maintain social and political relationships (Diamond, 2012). The most important goal, according to Diamond, (2012) is often to build and maintain strong relationships that can be called upon in time of need. Within traditional societies the concept of establishing and maintaining interrelationships with fellow human beings is seen as essential for survival and prosperity.

The dimension of time can be viewed in multiple relevant ways to economy. For many traditional societies time is not measured as a commodity (i.e. 'time is money'), but is experienced as cyclical part of Nature's rhythms (Pierotti & Wildcat, 2000; Christenson, 2001). As many traditional societies rely on subsistence farming for their livelihood, following accurately the agricultural yearly, monthly and daily rhythms is central for it increases chances of survival and prosperity.

Furthermore, O'Riordan (2004) proposes bringing together traditional societies' sense of time with modern living ideas and ideal as a union suitable for embracing sustainable living. Having a work life that is more in tune with Nature supports individuals' physical and mental health, which can be linked with being economically effective and fulfilled. O'Riordan, (2004:33) supports this observation by suggesting that,

> Tuning into the rhythms of life support is generally the benchmark for many indigenous peoples and sensitive local cultures. By sensing the rhythms of long established ways of living, yet ensuring health, freedom of choice and opportunities to be adaptive for health creation in the modern world, it may be possible to link the traditional with the innovative through natural rhythms, social justice and returning waste into new economic options.

2.4.4.2 Social constructs, values and relationships

Diamond (2012:9) says that "traditional societies in effect represent thousands of natural experiments in how to construct a human society". Though not taking a romantic view of traditional societies, Diamond (2012) further suggests that some traditional societies' practices of raising children, attitudes to danger, caring for the elderly, keeping healthy and resolving conflicts are possibly beneficial for all who live in traditional and modern worlds. However, he cautions that picking up a traditional practice and attempting to implement it in a modern society may not always succeed, and there are aspects of traditional societies, such as chronic warfare and abandonment of the elderly that would

not be desirable. This follows that it makes sense for traditional communities to retain such positive practices through the process of change and adaptation to a more modern lifestyle.

Language is the principle vehicle through which TCK continues to exist, thrive and be communicated (Coral & Darou, 2002). Brody's (2001:180) experiences with the First Nations of Canada led him to understand that loss of one's native language is "…a silencing of who people have been, where they live, and therefore of who they are". Language as a means of communication includes not only spoken words but body language. Furthermore, signs such as drawings, objects, sculptures, artefacts are also used as a form of communication (Bocock, 1992). TCK remains vibrant and physically and mentally energizing when it is passed on from one generation to another (Clammer, 2002). This knowledge is intimately linked and brought to life when it is conveyed through language for words carry within them cultural and spiritual meaning (Aikman & King, 2012).

Oral tradition carries within it the history of its society, be it through storytelling, creation myths, dance, song, and music (Castellano, 2000; Campbell, 1988; 2007; Clammer, 2002; Styers, 2011). According to Castellano, (2000:31) "stories inform and entertain; they hold up models of behaviour; and they sound warnings". Recounted repeatedly in rituals and ceremonies stories are the documentations of the past of a people (Castellano, 2000; Campbell, 1988; 2007; Clammer, 2002; Styers, 2011). Language then plays a crucial role in defining the societies' distinct identity. Odora Hoppers (2004:6) explains that language "…contains the map of the land, the relationships to the energies and spirits of all livings things – rocks, trees, plants, birds, fish and animals". Diminishing indigenous languages result in their TCK being rapidly lost. Thus valuable ancient knowledge of the natural environment, which is relevant to sustainability, is wiped out.

Myths often describe creation and the origin of their society. People respond to their environment which then shapes their myths (Campbell, 2007). Myths are potentially a vital element for individuals making sense of their place in the past which then helps

them to be awake in the present (Styres, 2011). Campbell (1988:9) explains that myths are "stories about the wisdom of life" which give clues and meanings about the experience of being alive and fulfilling human's potential. There is no clear line between facts and metaphors and it is up to the listener to find that line (Brody, 2001). The purpose of myths is to guide humans to their inner world where they can learn to understand messages and signs on how to live in the world (Campbell, 1988). Another purpose of myths, according to Campbell, (2007) is to direct the young from their place of home in Nature and at the same time to bring the old back to Nature.

Campbell (2007) suggests that there are typically four roles and meanings to myths: mystical, cosmological, social and psychological. Mystical, relates to human beings' needing to find resolution between their awakened consciousness (where innocence is lost) and the conditions prior to their existence. In cosmological myths, sentient beings, the stars, the planets and non-living things are part of the metaphysical components of the universe that function as vessels and emissaries for delivering messages (Campbell, 2007). The social role of myths is to act as the authority for ensuring that rules and laws are kept for the purpose of maintaining social and moral cohesion. The psychological dimension of myths holds and supports the above three roles and moulds people to the socially constructed principles and aim of the group (Campbell, 2007).

A community in traditional societies consists of, at its base, the extended family, neighbours living in geographically close proximity. It forms a strong entity needed for survival (Tuan, 2002). Brody (2001) suggests that in hunter-gatherer societies, experts' advice is deeply valued but individuals are expected to make their own decisions which are then respected by the community. Brody (2001:118) concludes that "choice and freedom are centred on each person, unconstrained by society hierarchy" enabling a delicate balance between community and individuality in some traditional societies.

Tuan (2002) suggests that uniqueness of individuality has a positive element, even in egalitarian communities, for it allows for an individual's particular abilities to be realised. On the other hand, the negative aspects of uniqueness are that it can isolate individuals within a community leading to sense of loneliness. Individualism can also

compromise the strength of cooperation within a community which is essential for survival.

Traditional societies hold values that support living together as a community (Hewlett, 1991; Fricke, 1994; Norberg-Hodge, 2000; Pierotti & Wildcat, 2000; Brody, 2001). A concern not to insult others and refraining as much as possible from friction, conflict and anger is deemed essential for survival (Norberg-Hodge, 2000; Brody, 2001). Cooperation in time of hostilities with other societies or when faced with natural disasters, may be a matter of life and death. Conflict resolution, emotional reconciliation and restoration of former relationships is essential in traditional societies for they reside in their area throughout their lives (Odora Hoppers, 2004). Conflict resolution through mediation is perceived as necessary for the restoration of peace and harmony in the community, for friction between some members of the society can compromise its resilience (Pierotti & Wildcat, 2000; Diamond, 2012).

Fricke, (1994:2), an anthropologist who studied some Himalayan ethnic groups, reflects that, "change comes from a combination of intervening external events and processes over which a population has no control and through the consequences of behaviours designed to work in a particular environment to which they are adapted". The manner in which traditional communities accept and adapt to social and environmental change (including changes that occur through development projects) determines the survival of their TCK. There is a tendency to regard change relating to development in a positive light. However, Brody (2001:145) questions the validity of the belief that all change is for the better with regards to changes that traditional societies have undergone:

> …to suggest that all change is for the better is to pretend that frontiers do not exist, or that they proceed in some benign and innocent way. This is a belief, not a discovery made by social science. To insist that all changes are some form of "development" does not oppose romance with realism. Faith in progress is itself a kind of religion.

Family relationships are highly important for traditional societies. They provide an immediate source of security and sense of belonging. Children living in traditional communities experience their family structure to include their parents and siblings, aunts and uncles and their children, and grandparents (Guilfoyle, et al., 2010). All extended family members take part in caring for the children of the family. Family structure in traditional societies can possibly be divided into hunter-gatherers with an egalitarian approach and herders and farmers communities with mostly a patriarchal system (Diamond, 2012). In many patriarchal families women raise the children with little involvement from the men (Brody, 2001).

Styles of raising children vary between traditional societies, from a strict adult led approach to free and open child directed practices (Diamond, 2012). Parents in most traditional egalitarian communities, for example, are not focused on pushing their children in developing in a particular direction, but rather, allow the child's inner being and individuality to be expressed. They are more likely to allow their children to make their own decisions as they trust that their children are capable of comprehending their own needs (for example see, Hewlett, 1991; Brody, 2001; McPherson & Rabb, 2001). Such parents are more likely to enable their children to develop at their own pace and build on their own inherent strengths. Therefore, they give their children more autonomy (Brody, 2001; Diamond, 2012). Having said that, the level of danger in the environment in which the children grow up also determines the level of freedom they will experience (Diamond, 2012).

Farming and herding societies approach to raising children on the other hand, is gender and age based; children are guided and taught; they are more likely to be punished and respect for adults must be adhered to (Diamond, 2012). In both cases, extended family and the community caring for the child means that there are more people who can provide food for the children; there are many role models; and the children have greater practice in developing their social skills (Brody, 2001; Setalaphruk & Price, 2007; Guilfoyle, et al., 2010; Alcalá et al., 2014).

Children in traditional communities are integrated into the domestic, caring and productive activities by watching adults, gradually participating, and through that they

acquire traditional knowledge and skills necessary to survive and thrive in their world (Ruddle & Chesterfield, 1978; Sillitoe, 2002; Rogoff et al., 2003; Setalaphruk & Price, 2007; Rogoff et al., 2007; Reyes-Garcia et al., 2009; Wongbusarakum, 2009; Guilfoyle, et al., 2010; Rogoff, 2014; Alcalá et al., 2014; Rogoff et al., 2015).

Diamond (2012) explains that understanding traditional cultures' styles of raising their children is essential if we are to comprehend a society's social interactions and practices. He admits that even though it is difficult to establish whether children are secure and confident as a result of the above mentioned style of parenting, he observes that traditional societies' children grow up to become resilient adults who are "…capable of coping with big challenges and dangers while still enjoying their lives" (Diamond, 2012:174). Brody (2001), who also spent many years amongst indigenous societies, tends to be in agreement with Diamond for he too observes, for example, that First Nations children tend to be confident, secure and emotionally healthy as a result of being raised as respected equals.

The United Nations Convention on the Rights of the Child (UNCRC, 2013:5) stresses that children obtain and assimilate their cultural knowledge through play and that it is vital for transmitting culture:

> Children reproduce, transform, create and transmit culture through their own imaginative play, songs, dance, animation, stories, painting, games, street theatre, puppetry, festivals, and so on. As they gain understanding of the cultural and artistic life around them from adult and peer relationships, they translate and adapt its meaning through their own generational experience. Through engagement with their peers, children create and transmit their own language, games, secret worlds, fantasies and other cultural knowledge.

Play involves children acting out stories they heard and imitating adult at work. Play serves not only as a developmental function but also in children practicing activities

which they will do as adult. To aid with this, children in traditional societies are usually allowed to play with objects and tools that are used by adults (Diamond, 2012). There are no particular toys other than the ones children make themselves or toys that are made by their parents. The natural environment functions as their playground with pebbles, sticks, leaves, mud and streams.

In traditional cultures children spend a great deal of time playing next to their parents and other community members who are usually busy working (Rogoff et al., 2015). They also tend to play in mixed age groups which helps the younger children learn to socialise, improve their language skills and support their general development; and the older children learn to be caring and inclusive of younger children. Hence, these children, through play also learn to share and cooperate.

Rogoff et al., (Rogoff et al., 2003; Rogoff et al., 2007; Paradise & Rogoff, 2009), who studied several indigenous cultures in the Americas, observe that children in traditional societies learn through intent observation, engaging their senses, and through doing; hence they learn mostly through experience. They also recognise that education in traditional societies is integrated into every aspect of life and that knowledge and language are learnt through social situations, and teaching is conducted in a subtle and experiential way. (Rogoff et al., 2015).

Rogoff et al., (2003; 2015) named this traditional style of learning as "Learning through Observing and Pitching In" and explain that it is common to many traditional communities. Rogoff et al., (2015) describe that this kind of learning involves features such as, inclusiveness, sense of belonging, collaboration, sense of responsibility, keen attention, and verbal and non-verbal communication.

Diamond (2012) says that there is a wide range among societies in the way they view and treat older people, depending on the degree in which old people are useful to their society. Usefulness is manifested in holding knowledge of their cultural tradition, social networks that can be useful for their children; remembering genealogy of members of

the community, holding knowledge in their memory of medicine, plants, animals, soils, where to locate food, religion, songs, myths, games, dance and initiation rites (Diamond, 2012). They hold the history and identity of their society (Guilfoyle, et al., 2010) and their knowledge solidifies, endorses and maintains this "fundamental dynamic of human, spiritual and Earth life" (Posey 2002:29).

As already noted, there is a critical relationship between language and transition, and survival of TCK (Clammer, 2002; Coral & Darou, 2002; Sillitoe, 2002; also see Florey, 2009; Muller, 2009; May & Aikman, 2010). Throughout the world, traditional societies' knowledge and language has been pushed aside, often primarily through the institution of education (UNESCO, 2009; Aikman & Dyer, 2012; Aikman & King, 2012; also see, Akena, 2012). Nevertheless, traditional people value formal schooling in order to participate to varying degrees in the wider world. However, many of them also fight for the right for their TCK and language to be included as part of the formal education (Norberg- Hodge, 2000; Brody, 2001; May & Aikman, 2010).

2.4.4.3 Nature

Scott and Gough (2003:4) made a distinction between the terms Nature and environment. They explain that whatever social construction of reality humans have, humans are not able to negotiate natural laws. The Earth acts according to natural laws and "only by adding in the meanings we attach to our surroundings do we come to a description of *the* environment – that is, ours, the one we live in". Scott and Gough (2003:5) point out that there is a difference between what "society, (N)ature and the environment *physically* are on the one hand, and *how we think about them* on the other". In the here and now social constructions may prove to be at odds with biophysical reality, and in that case there is only one winner.

This section is not concerned with cultivated landscapes, or what Redclift and Woodgate, (2013:94) term 'Second Nature' that has been transformed by humans through, for example, cultivation and farming. Redclift and Woodgate, (2013:93) refer

to ‘First Nature’ as “…a (N)ature little influenced by human activity, often described in terms of ‘wildness’”.

To others, such as deep ecologists, (Devall & Session, 1985:110) wilderness is an “ecosystem that has been minimally disrupted by the intervention of humans, especially the destructive technology of modern societies”. The deep ecology relationship to wilderness differs from that of traditional societies who have a more practical, ancient understanding and connection with their natural surroundings.

In a conversation with Professor Bill Scott, (Scott, pers. comm., 15th October, 2013) he shared his idea that culture is the home of Nature. The manner in which we determine Nature is through the way we are culturally informed. Nature is a social construct and hence viewed differently depending on one’s interests and reasoning (Le Grange, 2004). Sachs (1991:50) explains that “…(c)ulture that sees (N)ature as a living being tend to carefully circumscribe the range of human intervention, because hostile response is to be expected when a critical threshold has been passed”. Traditional societies may see Nature as a threat and on the other hand view themselves as interconnected with Nature. Their instinct is not to seek to dominate or conquer Nature but centred on the “…co-evolution of the spiritual, natural and human worlds” (Odora Hoppers, 2004:4).

We might think in terms of two broad opposing worldviews of humans’ interactions with Nature: an anthropocentric/technocentric with a strong emphasis on human beings’ domination of Nature, and ecocentric/biocentric, such as Deep Ecology, which advocates living life in harmony with Nature (O’Riordan, 1989). In some ways Deep Ecology’s perception of Nature may have borrowed traditional societies’ cultural awareness of Nature but possibly, unlike traditional societies, may suggest a sentimental view towards the biosphere among well-off people. In this study and based on my own experience of working with traditional societies in the Himalayas, I take the middle ground where traditional people seek to on the one hand, live in agreement with Nature but they also see Nature as a resource to be tapped into to survive and prosper.

SD comes from a modified anthropocentric view which arose in the eighties. It is human focused with the aim of improving humans' quality of life through redistribution of wealth and eradication of poverty. It sees the way to achieve this is through increase economic capacity with science and technology providing solutions to environmental problems, but it recognises the importance of respecting Nature's limitations (Sandell, et al., 2003). Gladwin, et al., (1995) argue that the anthropocentric/technocentric worldview alone is not supportive of sustainability for it separates humans from Nature and does not value equality for it privileges a minority with wealth and power which compromises the future of humankind. In their view this worldview will become "a paradigm in crisis" (Gladwin, et al., 1995:886).

2.4.4.4. Spirituality

This section relates to the spiritual relationship and connection (or not), that human beings experience to the non-human Nature; the construction of Nature as a spirit entity; and the divine nature in human and non-human Nature. Central to many traditional societies is keeping a healthy relationship with Nature and maintaining local ecological systems (Bowers, 1995; Pierotti & Wildcat, 1997, 2000; Nakashima & Roue 2002; Sandell et al., 2003). The spirit (s), accessed usually through shamanism, requires constant attending to in order to maintain and sustain the balance between humans and their natural environment.

Interdependency for traditional people goes beyond human interactions and includes every aspects of existence (Cajete, 2000; Pierotti, & Wildcat, 2000; Odora Hoppers, 2004). Pierotti and Wildcat, (2000:2) explain that "(c)onnectedness and relatedness are involved in the clan systems of many indigenous peoples, where nonhuman organisms are recognized as relatives whom the humans are obliged to treat with respect and honor". In addition, traditional societies do not see themselves as separate from Nature but part of an intricate mandala [or the mental worlds we create that has a centre and a periphery (Hookman, 2001)], with their survival and prosperity at the heart of it (Cajete, 2000; Norberg-Hodge, 2000; Nakashima & Roue, 2002; Posey, 2002).

Many traditional societies that rely on agriculture for their survival put their faith in spirituality to cope with calamity, to gain control over their world through receiving clues into the future, and for support in making decisions (Norberg-Hodge, 2000; Nakashima & Roue, 2002; Posey, 2002; Sillitoe, 2002; Eyong, 2007). Some traditional societies such as hunter-gatherers use spirituality, Brody (2001) explains, to understand their environment better.

Posey, (2002:28) explains that for traditional people knowledge comes from the spiritual realm and not through science, therefore, "…all creation is sacred, and the sacred and secular are inseparable". In other words, Posey suggests, traditional knowledge expresses universal knowledge in a local way. Diamond (2012) suggests a slightly different perspective, that religion or spirituality has been part of almost all societies, and implies that religion fills some common callings or wants within humanity. The discussion of what religion is and the reasons behind the human need for religion will only be slightly touched upon here as many aspects of this discussion lie beyond the scope of this research. There are numerous definitions of the words "religion" and "spirituality", some dating back thousands of years. Taking Diamond's (2012:329) position that religion is a universal human need, I chose his working definition:

> Religion is the belief in a postulated supernatural agent for whose existence our sense can't give us evidence, but which is invoked to explain things of which our senses do give us evidence.

Believing in supernatural beings as the means to provide explanations has been most common in religions (Diamond, 2012). Religion fulfils the need for meaning in humans' lives. Other functions of religion include keeping social cohesion, obedience, providing hope, consolation and emotional support in time of stress and uncertainty, reducing anxiety and a coping mechanism when faced with danger (Diamond, 2012).

Most traditional societies conceive all living organisms, non-living things (e.g. rivers or mountains) knowledge and the Earth as cosmically connected (Cajete, 2000; Pierotti &

Wildcat, 2000; Majupurias & Majupurias, 2013). Posey (2002) observes that in traditional societies, spirit and matter form parts of one reality. Spirits and Nature spirits are perceived as being powerful enough to cause harm and destruction to humans, their animals or crops if they are not pacified. Belief in the processes of reincarnation, transformations and manifestations into objects and/or non-human living beings, connects the spiritual realm to the material and forms a bond through their way of life with the landscape (Posey, 2002). There is a high risk that the loss of this attachment and knowledge will result in breaking this connection (Posey, 2002) which is critical for sustainability. The definition presented here is sufficient for this study which takes into consideration the relationship traditional societies have with Nature through devising supernatural explanation to natural phenomenon. At the heart of all this lies the fact that (scientific) truth does not always make a person happier, or lead her to do better things.

2.5 Education

I begin this section of my literature review in the context of the discussion to this point: Does education today divorce children in traditional societies from their environment, and instead prepare them to specialise in a restricted field fitted primarily for a modern urban environment? Do schools prevent children from seeing the traditional context they were brought up with? Do they leave school ill equipped and with a sense of rejection to their own traditional resources, leaving them incapable of functioning in their own world? These questions have helped to define the boundaries of this section.

This literature review has taken, so far, the path of looking at SD from alternative development perspective; to exploring TCK and its applicability to SD and alternative development. I will now define the context within which, I chose to engage with Sterling's (2001) SE paradigm and aspects of SWE as guides and a foundation to design a SE programme. This is not to say that education here is seen solely as the vehicle to promote SD for in this study I take the position that education is an end in itself. I begin with a short review of environmental education/ecological education, education for sustainability and education as sustainability, building my case for SE paradigm and its implications. The last part of the literature review focuses on Steiner's education ideas and his philosophy of (inner) freedom which underpins his child development and education theory and practice. The discussion on Steiner's philosophy develops Sterling's (2001) idea of deep level consciousness learning and change from a spiritual perspective.

Agenda 21 (UN, 1992:36.3) tells us that "(e)ducation is critical for promoting sustainable development and improving capacity of the people to address environment and development issues". However, it does not elaborate on the ways in which capacity building may be achieved, other than stating that it should be done through education. Furthermore, some of the ways sustainability issues may be addressed through education in industrialised countries differ from what is required in traditional cultures.

Both immediate and long term needs of traditional cultures ought to be included. Traditional ways of living are still alive in some societies around the world and many of their practices are possibly ecologically sound. The intention of this research is to find out whether the integration of TCK encourages participation and ownership through imbuing the right kind of human-Nature relationship.

A particular interest for this research is linked with Chapter 36 of Agenda 21 (UN, 1992) which describes education as an important vessel to bring about the change towards SD. The opening statement of Chapter 36 begins with "(e)ducation, raising of public awareness and training are linked to virtually all areas in Agenda 21" (UN, 1992:36.1). Furthermore, Rio+20 (UN, 2012:43) reaffirms that "…full access to **quality** (my emphasis) education at all levels is an essential condition for achieving sustainable development…"

Agenda 21 stresses the importance of the process of education as a vehicle for individuals and societies to build their capacities and achieve their full potential (UN, 1992). The Brundland report (UN, 1987) states that the manner in which individuals throughout the world may be convinced to commit and take active part in the common interest of SD, in part rests on education. Agenda 21 Chapter 36 recommends that environmental, cultural and development ideas should be incorporated in education including those that are within local context using best available scientific evidence to back such learning. It further recommends that "(a) thorough view of curricula should be undertaken to ensure a multidisciplinary approach, with environment and development issues and their socio-cultural and demographic aspects linkages. Due respect should be given to community-defined needs and diverse knowledge systems, including science, cultural and social sensitivities" (UN, 1992:36.5).

Orr (2002:1457) advocates a holistic approach to shifting to sustainable lifestyles. He writes that "the barriers to a graceful transition to sustainability, whatever forms it make take, are not so much technological as they are social, political and psychological". The process towards SD requires the willingness of individuals, communities and nations to participate and have a general understanding that cooperative societies are a necessity

for a sustainable future. Working towards this aspiration, education becomes fundamental to this process or as one of the key agents towards sustainability (Sterling, 2001).

Bowers (1995) contends that informative education will not do and introducing sustainable concepts into the existing education system is useless. Bowers (1995) and Sterling (2001) both observe that the current westernised education approach is centred on transmitting knowledge. Sterling (2001) and Bowers (1995) are both of the opinion that this is not conducive to meeting sustainability. Similarly, O'Riordan (2004:34) observes that "schools devise curricula on the basis of received outlook that relies on being non-sustainable for its maintenance". Smith and Williams (1999:28) support these views by arguing that the core of the problem lies in education that is divorced from the reality outside the school; learning is fragmented and disconnected and this phenomenon takes place in schools worldwide.

Both Bowers (1995) and Sterling (2001) suggest that willingness of human beings to take on SD requires a change of culture in the education system; requiring the right kind of change to move towards SD. A change of culture or in consciousness, in Sterling's (2001) words, helps individuals and communities think about having a better life without losing the aspects of their lives that constitute high quality of living.

This calls not only for a shift towards a more holistic and transformative approach to education (but not exclusive of some aspects of informative/transmitting type of education), but also to consider the dimension of time in education. Choices we make in the present have consequences now and in the more distant future (Gough, 2014). Gough (2014) suggests that we should perceive education part of longer rhythms of human history as well as focusing on the immediate and local.

Under current education systems, traditional societies' school graduates face a big issue with employment opportunities and many migrate to the cities where they struggle to obtain paid work, live in poverty (Norberg-Hodge, 2000) and may become dependent

on the money economy and the fleeting whims of markets. Educating traditional societies' children through transformative education with a long time frame in mind can bring about a shift from this pull to the city. Furthermore, people find themselves away from their community and therefore lose their support system, and their land where they can grow food. Thus, the current education system mostly produces unsustainable results in traditional societies.

Sterling (2001) admits the ideas behind SE are not new, for sustainable ways of life has been part and parcel of many traditional societies for centuries. Bowers (1995) and others express that there is a need to shift towards transformative education that also includes TCK. In the present such knowledge may not seem valuable but possibly in the future, it can become significant (Gough, 2014). Richard Rorty (1999) says that we can only negotiate the best way forward, step by step, by using the tools we have, including linguistic and conceptual tools. It is impossible to know what humanity's needs might be a century from now. Policies address issues that are of short term importance, however, enduring things of value carry within them long term dimension conserving valuable knowledge through time (Gough, 2014). In other words, it is about cultivating and improving some aspects of lifestyles without losing properties, such as clean environment, protecting ecosystems and producing nourishing food that constitute high quality of living and retain options for the future.

Conventional education does, of course, have merits, such as improving literacy and numeracy rates which help traditional cultures to be informed about the forces at play in the world outside. In short, when considering SE a balance of local, traditional, cultural and sustainable, scientific and holistic knowledge is called for. Lastly, educating children for resilience through the ability to accommodate change becomes now necessary in education for the world is rapidly changing, requiring constant and continuous adaptation and humans developing resilience to maintain well-being. Le Grange, (2004:18-19) suggests that because modern society lives and is surrounded with constant risk "education's response should be to prepare learners to be able to negotiate and live with risk".

2.5.1 The journey from environmental education to sustainable education

Environmental Education (EE) grew substantially after the 1972 UN Conference on Human Development. The Stockholm conference saw education as a crucial tool in dealing with issues concerning the environment and this gave a big push forward to EE, bringing it more to the limelight (Hopkins, et al., 1996; Sterling, 2004). In the early 1990s a shift occurred from EE to education for sustainable development (ESD), which emphasises social and economic elements.

The manner in which both EE and ESD have manifested in practice is linked to their worldviews ranging from ecocentric to technocentric perspectives (O'Riordan, 1989). Scott and Gough (2003:111, 114) summarise this spectrum of worldviews into three types:

> (E)nvironmental problems can be solved through appropriate social and environmental measures; the main causes of environmental problems are social and political and not ecological; (and) there is no possibility of knowing the future and therefore the future will be co-created through human interactions with the environment.

Scott and Gough (2003:124) emphasise the third type, and argue for a co-evolutionary view of human–Nature relationship where "society adapts to its environment; the environment responds to human activity and both shift over time."

Gough, et al. (2015) suggest that people occasionally have attitudes which are consistent and are influenced by their level of knowledge. As an example, Smith and Williams (1999:4) suggest that "what environmental education has tended to forget and ecological education attempts to remember is this ineluctable relationship between specific biosystems and cultures". They explain that cultures that retain their knowledge fit themselves and their practices to their environment while industrial societies' cultures find themselves in a more removed type of relationship with their natural environment.

Others, particularly socially-critical theorists such as Huckle (1993) favour the second type. Their answer to human-Nature issues is to control further environmental degradation through social sciences and radical social change. Huckle views education as a tool to progress a particular form of socialism, as in his view it is capitalism that destroys the environment. Hungerford, et al. (1988) illustrate an emphasis on the first type of worldview, and focus on changing people's behaviour. Their view is that of control of Nature through the sciences and technological innovation, hence, reorienting education towards a technocratic approach to human-Nature relations.

Sterling (2001) takes a more inclusive approach when he suggests that even though EE in itself is not enough to bring about a shift towards sustainability; it has an important part to take in the process of this needed change. However, his SE theory goes beyond EE and ESD and calls for transformative approach to learning working on changing individual consciousness. Sterling (2001) describes transformative education as one that goes beyond transmitting knowledge and facts, it is experiential, well-rounded, and participative encouraging a process that allows learners to take ownership of acquired meaning. The instrumental element of transformative education is that "it works for change for the better but often also recognises intrinsic values and quality of learning, stressing democratic and participative methodologies" (Sterling, 2001:26).

Sterling (2001) suggests aspects of SE can be observed in initiatives such as Schumacher College, or UNESCOS's Four Pillars of Education model (Delors, 1996). SE, Sterling (2001) proposes, can possibly become the overarching term or space for confluence of transformative, progressive, holistic educational concepts and approaches such as the one offered by Steiner (1861-1925). Steiner in his worldviews says nothing about sustainability as such but offers a theory of spiritual understanding of Earth, children and learning that seems relevant.

2.5.2 Interlinking traditional cultural knowledge, Sterling and Steiner's theories

Transmitting TCK in the process of learning in itself is not sufficient; it is the manner in which TCK is used in education in support of the child's changing consciousness which is crucial. In a similar way knowledge and understanding of Nature and sustainability issues which are achieved through an appropriately integrated holistic way, would promote such beneficial change. The work of Sterling and Steiner has strong bearing on this research as it is possible to derive insights and practical educational implications into Sterling's theoretical work from Steiner's philosophy. Thus, in this literature review, I am particularly interested in the areas where the two theories add to and further support each other. The reason for this is to attempt to employ Steiner's practical educational (from pre-primary to secondary school level) applications with Sterling's SE theory. I begin by introducing key terms and insights of Sterling and Steiner's theories and present the ways in which the two author's works are complementary, as well as briefly touch on some important differences.

Sterling gives us the notion of SE which integrates ideas of deep level consciousness in transformative education. Steiner's extensive work seeks to understand the interconnections between Nature, spirit, humanity, and Earth and includes detailed practical and holistic application in education. I examine Steiner's philosophy and educational approach suggesting it should be correctly classified in Bateson's (1972; Sterling, 2003) second and third order of learning and change and Sterling's (2003; 2010) second and third levels of knowing. These levels of learning, knowing and change involve and affect different degrees of consciousness, something which is central to Steiner's theories.

2.5.3 Sustainable education

Transformation for Sterling (2001) is seen as a deep response to the process of change that focuses on realising and maintaining human potential in order to reach ecological, economic and social health and well-being. Sterling observes (2001) that knowing what the grave sustainability issues are and even understanding what we must do in order to save the Planet has still not moved the majority of informed people to the necessary changes. He says (2001; 2003) that we need a change of consciousness for people to be

self-motivated to engage with change; the way to do it is through a transformative process of education and a shift in the way we think about our thinking.

Transformative education, Sterling (2009) suggests, requires whole system thinking where all aspects of learning and knowing are interrelated. Sterling (2010) draws his ideas of transformational learning from, among others, Mezirow (2000), and Morrell and O'Connor (2002) who explain that transformative learning is about shifting our mind-set, the way we think, feel and act in a more inclusive way.

Sterling (2014) developed various 'thought models' on how to re-think thinking in the required way. He constructed a model consisting of three interrelating components of seeing, knowing and doing, that together form a whole system. Sterling (2014) explains that the *seeing*, affective domain includes our perpetual ethos, values, emotions and assumptions. This aspect, Sterling (2014) explains, is about the way we perceive and make sense of the world as well as the manner in which our inner world shapes the experience which we encounter. The *knowing* cognitive domain includes our conceptual understanding and frameworks. This aspect relates to our understanding of the world and the manner in which we characterise the world. The *doing* intentional domain includes our practical action and skills realm. This aspect is about the way we plan, make decisions, act, and communicate in the world. Sterling (2014) suggests that this model can be used for generating awareness, designing a plan for change, and/or creating new education policies and practice. On an individual level Sterling (2014) suggests that this model can represent, value and cultivate learning that takes place in the head, heart and hands of the learner.

The foundation of Sterling's model of rethinking thinking is his a theory of three 'levels of knowing' which rests on Bateson's (1972) theory of three levels of learning and change: first order is conformative and is about "doing more of the same"; second order learning is reformative and is concerned with "doing better things"; and third order is transformative and involves "seeing things differently" (Sterling, 2010:25). The purpose of Sterling's (2010) 'levels of knowing' model is to suggest that through learning different levels of consciousness can be cultivated and emerge. Transformative learning,

Sterling (2010:22) suggests, means "learning which touches our deep levels of knowing and meaning… (which then) influence our more immediate and concrete levels of knowing, perception and actions".

SE, therefore, according to Sterling, (2001:25-26) is constructive, participatory and a means to integrate the following four functions of education (particularly the latter two): socializing; vocational; liberal ("develop the individual and their potential"); and transformative ("better world"). To meet whatever comes out of the future, Sterling (2001:22) says there is a need for qualities such as "flexibility, resilience, creativity, participative skills, competence, material restraint and a sense of responsibility and transpersonal ethics to handle transition and provide mutual support". SE also embodies values such as equality, democracy, sense of community and peace (Sterling, 2001). SE advocates for educators and learners with a sense of empowerment, encouraging determination and favouring self-empowerment (Sterling, 2001).

2.5.4 Steiner's education towards freedom

It is beyond the scope of this literature review to fully discuss Steiner's philosophy. I, therefore primarily concentrate here on exploring the usefulness of Steiner's theory in nurturing a process of unfolding and developing enhanced consciousness. In addition, whilst it is impossible to capture here the vast and detailed education theory and practice of Steiner's education, I focus on some of the most fundamental aspects of his approach. By identifying the core and the spirit of his indications in facilitating healthy consciousness development in children, there is the possibility to engage in deep level consciousness learning leading to change towards individual's inner freedom that is so urgently needed, as is suggested by Sterling and discussed above, to meet the challenges towards sustainability.

Individual freedom with regards to children, for Steiner, goes beyond the United Nations Convention on the Rights of the Child to include the autonomy of the child's spirit (Ashley, 2008). Thus, for Steiner, the task of education is to nurture the child's unfolding consciousness or spiritual development towards inner freedom (Woods, et al., 2006)

through “sow(ing) seeds of human spiritual freedom and moral productivity” (Oberski & McNally, 2007:937). Spirituality in education, for Steiner (1988), is centred on developing the capacities to be free in thoughts through bringing children into contact with their humanity. To develop such capacities, Steiner’s education integrates personal and spiritual development through a multi-modal approach to teaching and learning (Gidley, 2007).

In his educational theory, Steiner focuses on development of the properties of human beings and understanding their components and potential through nourishing the child’s inner being, fostering in her inner flexibility, adaptability, resilience, tolerance, and enthusiasm (Wilkinson, 1993; Stoltz & Weger, 2012). Steiner explains that children ought to be helped to find their inner strength so they can make their interface with the world possible. The right kind of education in childhood, therefore, according to Steiner, (1995; 1988) is a paramount to have the opportunity to raise self-empowered individuals capable of becoming free thinkers. The process of developing deeper consciousness is the path (starting in early childhood), according to Steiner (1995), towards becoming an ethical individual. Taking personal responsibility and developing enhanced consciousness requires self-determination. This autonomy is based on pure thinking that comes out of intuitive insights leading to free deeds that empower ethical actions (Steiner, 1995).

2.5.4.1 Steiner’s evolution of consciousness in childhood

Steiner does not define consciousness as such, but describes and characterises it and the path towards a higher level of consciousness of becoming ethical individuals. It is how we experience the world and how these experiences change; in other words consciousness is the relationship between the experiences of the inner part of our being in response to the external world from birth to death (and beyond).

Steiner (1988) indicates that children need to be taught according to their developmental phase. This means creating an appropriate environment for self-education in order to nurture the unfolding and development of consciousness that leads to becoming free

thinkers capable of free ethical actions (Steiner, 1995). To do that, Steiner based his education practice on his perception of human nature.

Steiner (1994:25) explains that a human consists of body, soul and spirit and that "our bodily existence is for all to see, but we carry our soul existence inside us as our own private world. Through the spirit, however, the outer world is revealed to us in a higher way". Body, soul and spirit are intricately interlinked and influence one another (Steiner, 1994; Steiner, 1996). These interconnections come to part in consciousness in the soul, through its thinking, feeling and willing faculties, because in the soul we encounter everyday experiences (Steiner, 1994). Steiner perceives these soul faculties as interrelated and being dynamically interactive. As thinking, feeling and willing interpenetrate, a differentiation in the way they relate to consciousness and how they interact with the world takes place (Thompson, et al., 1996). Furthermore, the soul's function is to link body and spirit: it receives experiences through the senses and grasps the spirit through thinking activity and intuition.

Steiner argues (1994) that the individual Self or 'I' is our spiritual being which finds its home in the soul and through which we transform both ourselves and the world (Wilkinson, 1993; McDermott, 2009). The task of the 'I' is to encourage and direct the soul (Thompson, et al., 1996). Steiner (1988) explains that throughout childhood the 'I' gradually awakens and reaches certain maturity where an individual can then develop spiritualy.

As we evolve, Steiner suggests, we have a different, changed experience of ourselves (Thompson, et al., 1996) and this change can be gradually acquired through consciously integrating and balancing the psychological activities of the soul of thinking, feeling and willing (McDermott, 2009), particularly if a strong foundation for such harmonising was provided in childhood (Steiner, 1988). The task of education, therefore, according to Steiner (2002), is to awaken consciousness through equally educating the hands (will), heart (feeling) and the head (thinking).

Steiner's educational aim is to enable children to develop the kind of consciousness so when they reach adulthood their individual self has a firmer foundation to "transform its inner experiences into conscious knowledge of the outer world" towards having a self-reflective consciousness or 'consciousness soul' (Gidley, 2007:126). The manner in which the soul's faculties work upon the body and spirit supports the development of the 'consciousness soul' (Steiner, 1994) or 'vision-logic' (Wilber, 2000). The 'consciousness soul' goes beyond abstract, intellectual form and participates in more spiritual and integral awareness (Steiner, 1994; Gidley, 2007).

2.5.4.2 Educating the head (thinking), heart (feeling) and hands (will)

Steiner saw the child as a "developing being" (Ogletree; 1974:345) with physical development being interlinked with unfolding of consciousness (Oberski, 2011). The development of soul in each of the three seven-year periods of childhood, from birth to age twenty one, occurs in the opposite direction to physical development. Whereas physical development goes from the head down, soul development predominately begins in the will (doing) and up through feeling to thinking (Steiner, 1988; 1996). Steiner (1996) suggests that in early childhood children develop, learn and practice new skills through doing; from age seven to fourteen through the feeling realm and in adolescence through thinking where they engage with logic and reasoning. Steiner insists that by the end of childhood, for the soul to be strong and balanced its faculties need to become inter-related in activity, feeling and thought (Salter, 1987).

Unfolding of consciousness in childhood occurs, according to Steiner, (1988; 1996) when children are provided with a nurturing natural environment where the soul of the growing child can be freely developed without external impediments. Thompson, et al. (1996:226) explain that "the awakening of the child's will (or doing) forces is a most important factor in (her) development because with this awakening comes the potential for humankind to build a better world". The child learns to understand the world through her senses. In the will she experiences the impulse to learn and to come into being (Thompson, et al., 1996). In early childhood, through the child being surrounded by adults' activities and dispositions that are worthy of imitation, the child form values and learns that the world is good. Nurturing learning through doing in early childhood has

the possibility to form the ground for the child to become self- disciplined and ready to take initiatives later on in life.

In the second period of childhood, children reach out to the world and are influenced by what come from their feelings (Thompson, et al., 1996). Children also develop, out of their own inner being, a love for the authority of the teacher, an authority in the teacher that comes out of sincerity, reverence and enthusiasm to teaching. This love transforms into respect for truth and knowledge as an adult. Engaging in rhythmic activities in all aspects of learning and being immersed in the arts, the child develops her feeling realm and pictorial image thinking and comes to experience and understand the world as beautiful. The adolescent's logical and abstract thinking is developing, enabling them to strive to make sense of the world and experience it as true. Steiner (1919:152) warns that "if, in education, we do not develop the intellect in the proper way out of will and feeling, then we work in a manner opposing human developmental forces rather than supporting them".

The virtues of gratitude, love and love for the deed, according to Steiner (1988), form part of the building blocks towards developing enhanced consciousness. If the virtue of gratitude is developed in the first seven years and love awakens in the child during the second seven years a love for work or deed emerges from within during adolescence (Steiner, 1988). The child's soul, according to Steiner, (1988; 1996) must be able to unfold unhindered, in order to enter the realm of human (inner) freedom in a more conscious way. When the virtues of gratitude and love have developed and awakened in the right way, then sense of responsibility that arises freely from within the adolescent, and which is an essential experience of life, will emerge (Steiner, 1988).

The teacher, beyond being committed to her own inner development towards freedom, must have knowledge of the whole human being and the manner in which consciousness evolves not only in childhood but throughout a person's lifespan and beyond (Steiner, 1988). Steiner (1996) explains that teachers need to focus on educating the right faculty of the child at the right age and through that, know how to properly assist the child's evolving consciousness deepen. He emphasises repeatedly that how we teach children

is much more crucial than what we teach them, for the how is used to develop students' potential and abilities as well as increase the development of imagination and creativity (Steiner, 1988; 1996). Steiner (1919) explains, that a human's life needs to be viewed by educators as a whole from birth to death and that influences in childhood, will appear later on in life, for better or worse. Hence, Steiner insisted that education must have respect for children's freedom in their interaction with the world and their development process, as well as "awaken and nourish the child's learning potential and not just to inform and instruct" (Thompson, et al., 1996: 21).

2.5.4.3 The arts and creative imagination

Prior to realising a universal ethical principle within oneself, the individual needs to have creative imagination to imaginatively translate the ethical picture into a picture of specific action (Steiner, 1995). Education towards freedom is one of the primary reasons why Steiner (1996; 2000) insists on teaching children using imaginative living concepts and the arts that are integrated into every taught subject. To Steiner, imagination is enhanced thinking and to cultivate this he advocates using imagination and the arts as the core of educating children in a holistic way (Nielsen, 2006).

Steiner observes that children engage and experience their inner and outer world when participating in art (Woods, et al., 2006), making it the medium for a successful link between spirit (sense free world) and matter (the world of objects). Nielsen (2006:248) explains that it is through "stimulating observation and thought articulated with feeling and wanting (doing), creative artistic activity enables the development of consciousness and in this way, the possibility of freedom". Thus, Steiner suggests, art supports the unfolding consciousness towards intuitive thinking through balancing the doing (the hand) the feeling (heart) realms. (McDermott, 2000; Schleder & Stoltz, 2014).

Furthermore, bringing warmth of feeling into thinking through creativity, for Steiner, is at the heart of developing deep level consciousness (Adams, 2014). Schleder and Stoltz (2014) and Nielson (2006) suggest that when children are engaged with art they are schooled towards intuitive thinking which empowers them to face struggles.

2.5.4.4 Educating for spiritual ecology

The human being and the universe, according to Steiner, do not exist apart from each other, they are constantly evolving together and in relation to one another (McDermott, 2009). Steiner understood that the purpose and evolution of Earth is dependent on the evolution of human consciousness and vice versa (Steiner, 2008). Steiner saw human evolution and earth evolution as bound together; as co-evolutionary. Therefore, cultivating the human-Nature relationship is central to Steiner's worldview and is strongly present in his early childhood to primary and secondary education theory and practice. Steiner advocates for children's experience of Nature by nurturing a sense of magic, wonder, awe and reverence (Mor, 2003). This works on the child on a deeper level of her inner being, for nurturing this inborn affinity children have with Nature, creates space for inner development (Thompson, et al., 1996).

To maintain that, Steiner (1988) does not recommend teaching about Nature from a solely intellectual dimension until adolescence, for his view is that such an approach separates the child's inborn sense of unity with Nature, hurrying their developmental stage and impeding their evolving consciousness. Steiner (1988; 1996) also suggests educating children in tune with the rhythms of Nature of day and night, the seasons, the earth and the cosmos. A growing child that experiences the rhythm of 'breathing in and out' of the universe is open to take in Nature into her being.

2.5.4.5 Steiner's education and traditional cultural knowledge

Seeds of consciousness find fertile soil throughout childhood as the child is impressionable, particularly in early childhood, and feels a whole with both the physical and spiritual world; the child's experience of Nature is that of unity. The seeds planted in early childhood are then nurtured in primary and secondary school and carried throughout life supporting the development of free, self-determining universal individual human beings (Sloan, 1996). The potential for new consciousness through self-transformation, according to Steiner (1995) lies in individuality and rational thinking, which in turn create "the possibility for recovering the ancient wisdom that

has been lost, recovering it in an integral connection with the new possibilities now open to *all* human beings for the realization of universal human dignity, freedom and love" (Sloan, 1996:3). Bringing together TCK and Steiner's educational ideas of developing consciousness has the potential to preserve TCK in a new consciousness that is relevant to the urgent needs of our time. Integrating Sterling's SE paradigm with TCK and Steiner's approach is likely to focus education on the urgent need to shift towards sustainability.

Steiner's philosophical and educational work is immense and this section provides very broad strokes to his detailed explanations.

2.5.4 Sterling's 'levels of knowing' and Steiner's education conceptual framework

Sterling's education worldview focuses on sustainability while Steiner's education focus on co-evolutionary spiritual development of individuals, humanity and Earth. Sterling's idea of deep level transformative learning also includes an individual level. Steiner's (1995) ideas of freedom are that they can only occur within an individual, so deep level change becomes something that is free, self-motivated and self-determined. Steiner's education practice has been tried and tested for about a century. Sterling's SE remains mostly in the realm of theory. Having said that, Sterling engages with the urgent needs of our times, making his theory more immediately relevant to the 21st century. On the other hand, Steiner's education, as is currently practiced in Steiner schools, does not directly engage with sustainability and is in some ways is outdated. This research seeks to combine the best of each.

2.5.6 Healing education

Resonating with Steiner (1988; 1996), Sterling (S., Sterling, pers. comm., 9th December, 2014) explains that education is ultimately about healing. Both Steiner (1983) and Sterling (2009) see healing as a system that cultivates nourishing relationships and that it can also appear at different levels of systems. However, whilst Steiner perceives the purpose of healing in education to support humanity's evolution of consciousness, Sterling (2004) expresses the urgency in bringing healing to education because it is

currently so far removed from sustainability. For Sterling (2004) education is heavily infested with limited perception and is diseased with fragmented thinking and disjointed practice.

2.5.7 Transformative education

Sterling and Steiner recognise that education needs to focus less on teaching factual abstract knowledge, but on enabling each individual to find themselves through a path of self-transformation by educating the head, heart and hands. Both authors emphasise the need for learning to include spirituality, intuition, Nature, and relationships with other human beings. Both authors insist that education must be grounded in process with less focus on outcomes; on nurturing the learners' changing consciousness; and both advocate for educators to have autonomy, and ownership where education is not led or controlled by corporations or governments.

Steiner views everything in the universe (which human beings are an integral part of) as interconnected and interdependent, a perception that is, on many levels, also shared by Sterling (2009). Sterling (2001; 2009) and Steiner's (1996) richness is that they advocate for teaching through characterisation (Steiner) and interconnecting (both) rather than through abstract concepts or definitions. The ability to use the imagination in an expansive way, according to Steiner (1988; 1996) is a skill necessary for developing higher thinking faculties and deeper levels of consciousness (leading eventually to inner freedom). Similarly, Sterling's (2009) systemic view of education and learning is that it values integration and whole system thinking.

One important difference between the two authors is that Steiner (1988; 1996) took his theories a step further than Sterling by providing intricate explanations, guidelines and practice on understanding and educating children in a manner that supports higher levels of consciousness development. As an example, Steiner (1983) insists for children to be raised naturally, thus, allowing best possible environment for the children's consciousness to unfold.

2.5.8 Ecology

Steiner (2008) explains that first a human being, in her soul, must experience the divine and then she can discover it in her environment. Recognising that the crisis faced with our unsustainable lifestyles are connected with consciousness, the following insight by Steiner, (2008:3) even though shared a hundred years ago, is relevant more so now; Steiner suggests that humanity is an integral part of the natural world's evolution "from which we can rediscover ourselves, just as we can find all of (N)ature transformed within us… but now, at this turning point, we must start to take responsibility for our own further evolution and with it that of the whole planet". Any relief to this crisis according to Sterling (2001; 2009), and when considering Steiner's human-Nature awareness, has to include self-transformation to higher level of consciousness. Reconnecting consciously with Nature is required but this needs to be grounded, according to Steiner (2008) and Sterling (2001; 2009) in self-awareness, self-determination and individual responsibility.

2.5.9 Epistemology

Steiner's views of the journey of laying a foundation in childhood to becoming an ethical individual are along similar lines to Sterling's (2003) second and third levels of knowing, although Sterling does not particularly focus on childhood learning. Steiner's education towards freedom then has the potential to build on Sterling's (2009) understanding that to reach a fully integrated ecological way of thinking and being, the emphasis should be on education itself, rather than thinking about the process of providing education.

2.5.10 Consciousness: Sterling's 'levels of knowing' and Steiner's ethical individualism

Sterling (2009) suggests that to rise to second level of knowing involves cultivating relationships that are based on sense of community, fairness, participation and self-organisation. An individual who moves to second level knowing does so by transforming first level of knowing. Third level knowing to Sterling (2010:23) is about "exploring a more rational, ecological or participative consciousness appropriate to the

deeply interconnected world that we have created" which aim is to transform first and second levels of knowing. The way towards second level of knowing in Steiner's (1988) educational approach involves respecting individual's growth based on developmental understanding which includes evolution of levels of consciousness. Steiner proposes that to be able to perceive with clarity we need to have moral qualities and, therefore, cognition and reverence for life are symbiotic (Richards, 1980). Some other aspects Steiner advocates which are linked with Sterling's second level knowing, are love, life, wisdom and teaching using the human voice in an authentic way (Gidley, 2007).

Gidley (2007:131) explains that Steiner's education has the potential "for integrally educating the whole child in a way that could facilitate evolution of consciousness not just for individuals but for planetary culture as a whole". Steiner (1995) (Wilkinson, 1993), in his philosophy of freedom, explains that the human being through perception is able to discover and identify universal laws that exist in their own right both in the mind of the observer and in the objects. Steiner's philosophy of freedom is the foundation from which he built his education theory and practice. Sterling, (2009:108) explains that "there is a need to recognize the habits of thought and perception that characterize our consciousness in order to be able to move beyond them". Leading from this I suggest that Steiner's ideas of individual freedom relates to Sterling's (2010) third level knowing. Even though Steiner's worldview centres on individual development through evolution of consciousness, his aim is to re-establish humanity's relation to the spiritual aspect of Earth (McDermott, 2009).

2.6 Summary of Key Issues, Ideas and Theoretical Framework

Through reviewing the literature I have identified key issues and ideas relating to the required changes towards sustainability; components of TCK; and indications of transformative education practices that lead to the possibility of deepening children's consciousness.

I then examined SWE suggesting it belongs to, in Sterling's terms, second and third order learning and knowing, which he claims is essential to make the urgent shift

towards sustainable living. Based on this I investigated whether some of SWE methodology and practical applications can be used as a vessel for integrating TCK into transformative education in support of changing consciousness towards sustainability. To be reassured that I am on the right track I asked Professor Sterling to read the education section of my conceptual framework relating to SE and SWE. In a conversation with him (S., Sterling, pers. comm., 23rd May, 2016) thereafter he confirmed my interpretation of his SE.

Based on my literature review, I designed my theoretical framework in a table form (see Table 2.1). I used this framework to guide me in gathering data and as a base for my analysis. This theoretical framework forms one aspect of the process required for designing a SE programme. In Chapters 4, 5 and 6 I use this theoretical framework as a guide in conducting an ethnographic study of *Bahing*, and for analysing their TCK. Through this I aim at finding out whether TCK can contribute to sustainability, and if so, what is the process of designing a localised SE programme. Next, in Chapter 3 I discuss methodology, and my choice of case study ethnography based on realist ontology and relativist epistemology.

Table 2.1: Theoretical and Analytical Framework

The following table presents an outline of my theoretical framework. I use the sustainable development (SD) and traditional cultural knowledge (TCK) sections of this table to guide me during my data collection stage. In addition this table forms the basis of my analytical framework for: sorting my data; arranging my findings; and conducting my three phase analysis discussed in Chapters 5 and 6.